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**Department of Defense
Fiscal Year (FY) 2021 Budget Estimates**

February 2020



United States Special Operations Command

Defense-Wide Justification Book Volume 5 of 5

Research, Development, Test & Evaluation, Defense-Wide

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United States Special Operations Command • Budget Estimates FY 2021 • RDT&E Program

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Department of Defense
 FY 2021 President's Budget
 Exhibit R-1 FY 2021 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

04 Feb 2020

Appropriation -----	FY 2019 (Base + OCO) -----	FY 2020 Base Enacted -----	FY 2020 Emergency -----	FY 2020 OCO Enacted -----	FY 2020 Total Enacted (Base+Emerg+ OCO) -----
Research, Development, Test & Eval, DW	612,634	840,127		11,726	851,853
Total Research, Development, Test & Evaluation	612,634	840,127		11,726	851,853

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04 Feb 2020

Appropriation -----	FY 2021 Base -----	FY 2021 OCO for Base Requirements -----	FY 2021 OCO for Direct War and Enduring Costs -----	FY 2021 Total OCO -----	FY 2021 Total (Base + OCO) -----
Research, Development, Test & Eval, DW	719,806		11,982	11,982	731,788
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Summary Recap of Budget Activities -----					
Applied Research	34,635	37,569			37,569
Advanced Technology Development	77,010	99,404			99,404
Operational Systems Development	500,989	703,154		11,726	714,880
Total Research, Development, Test & Evaluation	612,634	840,127		11,726	851,853
Summary Recap of FYDP Programs -----					
Intelligence and Communications	6,286	6,359			6,359
Special Operations Forces	606,348	833,768		11,726	845,494
Total Research, Development, Test & Evaluation	612,634	840,127		11,726	851,853

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Summary Recap of Budget Activities -----					
Applied Research	42,464				42,464
Advanced Technology Development	89,072				89,072
Operational Systems Development	588,270		11,982	11,982	600,252
Total Research, Development, Test & Evaluation	719,806		11,982	11,982	731,788
Summary Recap of FYDP Programs -----					
Intelligence and Communications	6,066				6,066
Special Operations Forces	713,740		11,982	11,982	725,722
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Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted S (Base+Emerg+ e OCO) c
23	1160401BB	SOF Technology Development	02	34,635	37,569			37,569 U
		Applied Research		34,635	37,569			37,569
70	1160402BB	SOF Advanced Technology Development	03	77,010	99,404			99,404 U
		Advanced Technology Development		77,010	99,404			99,404
238	0305208BB	Distributed Common Ground/Surface Systems	07	6,286	6,359			6,359 U
256	1105219BB	MQ-9 UAV	07	17,745	20,697			20,697 U
257	1160279BB	Small Business Innovative Research/Small Bus Tech Transfer Pilot Prog	07	18,445				U
258	1160403BB	Aviation Systems	07	168,026	267,695			267,695 U
259	1160405BB	Intelligence Systems Development	07	10,625	15,484			15,484 U
260	1160408BB	Operational Enhancements	07	98,395	159,922		726	160,648 U
261	1160431BB	Warrior Systems	07	74,250	75,514		6,000	81,514 U
262	1160432BB	Special Programs	07	2,885	21,005			21,005 U
263	1160434BB	Unmanned ISR	07	44,970	37,377		5,000	42,377 U
264	1160480BB	SOF Tactical Vehicles	07	1,806	11,150			11,150 U
265	1160483BB	Maritime Systems	07	40,600	72,626			72,626 U
266	1160489BB	Global Video Surveillance Activities	07	4,780	5,363			5,363 U

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23	1160401BB	SOF Technology Development	02	42,464				42,464	U
		Applied Research		42,464				42,464	
70	1160402BB	SOF Advanced Technology Development	03	89,072				89,072	U
		Advanced Technology Development		89,072				89,072	
238	0305208BB	Distributed Common Ground/Surface Systems	07	6,066				6,066	U
256	1105219BB	MQ-9 UAV	07	21,265				21,265	U
257	1160279BB	Small Business Innovative Research/Small Bus Tech Transfer Pilot Prog	07						U
258	1160403BB	Aviation Systems	07	230,812				230,812	U
259	1160405BB	Intelligence Systems Development	07	19,558				19,558	U
260	1160408BB	Operational Enhancements	07	136,041		1,186	1,186	137,227	U
261	1160431BB	Warrior Systems	07	59,511		5,796	5,796	65,307	U
262	1160432BB	Special Programs	07	10,500				10,500	U
263	1160434BB	Unmanned ISR	07	19,154		5,000	5,000	24,154	U
264	1160480BB	SOF Tactical Vehicles	07	9,263				9,263	U
265	1160483BB	Maritime Systems	07	59,882				59,882	U
266	1160489BB	Global Video Surveillance Activities	07	4,606				4,606	U

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267	1160490BB	Operational Enhancements Intelligence	07	11,612				11,612	U
		Operational Systems Development		588,270		11,982	11,982	600,252	
				-----	-----	-----	-----	-----	
				719,806		11,982	11,982	731,788	
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	Advanced Technology Development			77,010	99,404			99,404
238	0305208BB	Distributed Common Ground/Surface Systems	07	6,286	6,359			6,359 U
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264	1160480BB	SOF Tactical Vehicles	07	1,806	11,150			11,150 U
265	1160483BB	Maritime Systems	07	40,600	72,626			72,626 U
266	1160489BB	Global Video Surveillance Activities	07	4,780	5,363			5,363 U
267	1160490BB	Operational Enhancements Intelligence	07	12,176	9,962			9,962 U

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266	1160489BB	Global Video Surveillance Activities	07	4,606				4,606	U
267	1160490BB	Operational Enhancements Intelligence	07	11,612				11,612	U

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	Operational Systems Development			500,989	703,154		11,726	714,880
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	Total U.S., Special Operations Command			612,634	840,127		11,726	851,853

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	Total U.S., Special Operations Command			719,806		11,982	11,982	731,788	

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260	07	1160408BB	Operational Enhancements.....	Volume 5 - 137
261	07	1160431BB	Warrior Systems.....	Volume 5 - 139
262	07	1160432BB	Special Programs.....	Volume 5 - 223
263	07	1160434BB	Unmanned ISR.....	Volume 5 - 225
264	07	1160480BB	SOF Tactical Vehicles.....	Volume 5 - 243
265	07	1160483BB	Maritime Systems.....	Volume 5 - 251
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ACRONYMS

Acronym	Full Naming Convention
A2/AD	Anti-Access/Area Denial
AA	Air-to-Air
AbMN	Airborne Mission Networking
ACT	AFT Cabin Trainer
AMLCD	Active Matrix Liquid Crystal Display
ADS-B	Automatic Dependent Surveillance-Broadcast
A&FC	Airworthiness and Flight Characteristics
AI	Artificial Intelligence
AISR	Airborne Intelligence, Surveillance, Reconnaissance
ALFPK	Austere Location Force Protection Kits
AM	Amplitude Modulation
AMLCD	Active Matrix Liquid Crystal Display
AMN	Airborne Mission Network
AMS	Aviation Management System
APAS	Active Parallel Actuator System
ASE	Aircraft Survivability Equipment
ASIF	All Source Information Fusion
ATD	Advanced Technology Demonstration
ATPIALS	Advanced Target Pointer Illuminator Aiming Laser System
ATW	Advanced Threat Warning
AvFID	Aviation Foreign Internal Defense
AVS	Air Variant System
AWR	Air Worthiness Release
BAA	Broad Area Announcement
BFT	Blue Force Tracking
BLOS	Beyond Line of Site
BOA	Basic Ordering Agreement
CASEVAC	Casualty Evacuation
C2	Command and Control
C3	Command, Control, and Communications
C4	Command, Control, Communications, and Computer

ACRONYMS

C4I	Command, Control, Communications, Computers, and Intelligence
C4IAS	Command, Control, Communications, and Computer Intelligence Automation Systems
CA	Civil Affairs
CAAS	Common Avionics Architecture Systems
CAR	Combat Assault Rifle
CASEVAC	Casualty Evacuation
CBA	Cost Benefit Analysis
CCFLIR	Combatant Craft Forward Looking Infrared Radar
CCA	Combatant Craft - Assault
CCH	Combatant Craft - Heavy
CCM	Combatant Craft - Medium
CCME	Combatant Craft Mission Equipment
CDR	Critical Design Review
CDU	Control Display Units
CERP	Capital Equipment Replacement Program
CFE	Contractor Furnished Equipment
CHMD	Color Helmet Mounted Display
CIO	Chief Information Officer
CIM	Civil Information Management
CIMDPS	Civil Information Management Data Processing System
CMNS	Combat Mission Needs Statement
CMS	Combat Mission Simulator
CNVD	Clip-On Night Vision Device
COD	Correction of Deficiencies
COP	Common Operational Picture
COSI	Clip-On Short Wave Infrared Imager
COTI	Clip-On Thermal Imager
COTM	Communications-on-the-Move
COTS	Commercial-Off-The-Shelf
CP	Counter-Proliferation
CPD	Capabilities Production Document
CQC	Close Quarter Combat

ACRONYMS

CT	Counter-Terrorism
C-UAS	Counter - Unmanned Aerial Systems
DAMS	Distributed Audio Media System
DCGS-SOF	Distributed Common Ground/Surface System--Special Operations Forces
DCM	Defensive Countermeasures
DCS	Dry Combat Submersible
DCU	Data Concentrator Unit
DDS	Dry Deck Shelter
DI2E	Defense Intelligence Information Environment
DOD	Department of Defense
DRWG	Distributed Common Ground/Surface System Working Group
DT	Developmental Testing
DVE	Degraded Visual Environment
DVEPS	Degraded Visual Environment Pilotage System
DWS	Defensive Weapon System
EAC	Exploitation Analysis Centers
ECM	Electronic Countermeasures
ECOS	Enhanced Combat Optical Sights
ECP	Engineering Change Proposal
EDM	Engineering Development Model
EGPWS	Enhanced Ground Proximity Warning
ELINT	Electronic Intelligence
EMD	Engineering and Manufacturing Development
ENT/ASIF	Enterprise All Source Information Fusion
EO/IR	Electro-Optical Infrared
EOSS	Electro-Optical Sensor System
EOTACS	Expeditionary Organic Tactical AISR Capability Set
ER	Extended Range
ESA	Enhanced Situational Awareness
ETI	Evolutionary Technology Insertion
EUD	End User Devices
EW	Electronic Warfare

ACRONYMS

FABS	Fly-Away Broadcast System
FAR	Federal Acquisition Regulation
FADE	Fusion Analysis and Development Effort
FCD	Field Computing Devices
FFRDC	Federally Funded Research Development Center
FDWS	Forward Defensive Weapon System
FM	Frequency Modulation
FMV	Full Motion Video
FOC	Full Operational Capability
FoS	Family of Systems
FRP	Full Rate Production
FSOV	Family of Special Operations Vehicles
FVL	Future Vertical Lift
FY	Fiscal Year
FYDP	Fiscal Year Defense Plan
GATM	Global Air Traffic Management
GCC	Geographical Combatant Commander
GCS	Ground Control Station
GEOINT	Geospatial Intelligence
GFE	Government Furnished Equipment
GIG	Global Information Grid
GMV	Ground Mobility Vehicle
GOTS	Government-Off-The-Shelf
GPPU	General Purpose Processing Units
GPS	Global Positioning System
GSK	Ground Signals Intelligence Kit
GTR	Gun Training Room
HEL	High Energy Laser
HF	High Frequency
HFIS	Hostile Fire Indicator System
HFTTL	Hostile Forces Tagging, Tracking, and Locating
HHI	Hand Held Imager

ACRONYMS

HLM	Handheld Laser Marker
IC	Intelligence Community
IDIQ	Indefinite Delivery/Indefinite Quantity
ILS	Integrated Logistics Support
IM	Insensitive Munitions
INOD	Improved Night/Day Observation/Fire Control Device
IOC	Initial Operational Capability
IPN	Installation Processing Node
IR	Infrared
IRAD	Industrial Research and Development
IRCM	Infrared Countermeasures
IRSS	Infrared Suppression System
ISP	Integrated Survey Plan
ISR	Intelligence, Surveillance and Reconnaissance
ISR&T	Intelligence, Surveillance, Reconnaissance, and Targeting
IT	Information Technology
ITMS	Integrated Tactical Mission Systems
JIE	Joint Information Environment
JOS	Joint Operational Stocks
JTAC	Joint Terminal Attack Controller
JTWS	Joint Threat Warning System
LAM	Laser Aiming Marker
LCM	Low Cost Modification
LCS	Load Carriage System
LFT&E	Live Fire Test and Evaluation
LiDAR	Light Detection and Ranging
LMAMS	Lethal Miniature Aerial Munition Systems
LOS	Line of Sight
LPI/LPD	Low Probability of Intercept/Low Probably of Detection
LRBS	Long Range Broadcast System
LRE	Long Range Endurance
LRIP	Low Rate Initial Production

ACRONYMS

LRU	Line Replaceable Unit
LSDB	Laser--Small Diameter Bomb
LTATV	Lightweight Tactical All Terrain Vehicle
LWIR	Long-Wave Infrared
MALET	Medium Altitude Long Endurance Tactical
MAAWS	Multi-Purpose Anti-Armor/Anti-Personnel Weapons System
MANET	Mobile Ad-hoc Networking
MC/COP	Mission Command/Common Operational Picture
MCE	Military Construction Collateral Equipment
MEDVAC	Medical Evacuation
MELB	Mission Enhanced Little Bird
MERIT	Military Exploitation of Reconnaissance and Intelligence Technology
MFD	Multi-Function Display
MFP	Major Force Program
MG	Machine Gun
MGS	Modular Glove System
MICH	Modular Integrated Communications Helmet
MIP	Military Intelligence Program
MIPR	Military Interdepartmental Purchase Request
MISO	Military Information Support Operations
MLE	Military Liaison Element
MMP	Multi-Mission Payload
MPE	Maritime Precision Engagement
MPU	Mission Processor Unit
MS	Milestone
MSSEP	Mobile SOF Strategic Entry Points
MTA	Middle Tier Acquisition
MTD	Mission Training Devices
MTPS	Mission Training and Preparation Systems
MTS-B	Multi-Spectral Targeting System--B
MTTE	Maritime Technology Transition and Exploitation
MWC	Mid-Water Column

ACRONYMS

MWIR	Mid-Wave Infrared
MWS	Missile Warning System
MYP	Multiyear Procurement
NDI	Non-Developmental Item
NDS	National Defense Strategy
NET	New Equipment Training
NGA	National Geospatial-Intelligence
NGFLIR	Next Generation Forward Looking Infrared Radar
NG CCFLIR	Next Generation Combatant Craft Forward Looking Infrared Radar
NGLS	Next Generation Loud Speakers
NLP	Natural Language Processing
NM	Nautical Mile
NRE	Non-Recurring Engineering
NSAV	Non-Standard Aviation
NSCV	Non-Standard Commercial Vehicle
NSSS	National Systems Support to SOF
NTM	National Technical Means
NVD	Night Vision Devices
OA	Operational Assessment
OCO	Overseas Contingency Operations
OEM	Original Equipment Manufacturer
OFP	Operational Flight Program
OT	Operational Test
OT&E	Operational Test and Evaluation
P3I	Pre-Planned Product Improvement
PCAS	Persistent Close Air Support
PCU	Protective Combat Uniform
PDR	Preliminary Design Review
PE	Program Element
PED	Processing, Exploitation, and Dissemination
PGL	Precision Geo Location
PGM	Precision Guided Munitions

ACRONYMS

PISA	Predator Integrated Signals Intelligence Architecture
PME	Prime Mission Equipment
POR	Program of Record
PSM	Personal Signature Management
PSP	Precision Strike Package
PTT	Part Task Trainer
QL-CBA	Quick-Look Capabilities-Based Assessment
RAMS	Removable Airborne Military Information Support Operations System
RC-IED	Counter Radio Controlled-Improvised Explosive Device
R&D	Research and Development
RDT&E	Research, Development, Test, and Evaluation
RECCE	Tactical Reconnaissance Kit
RF	Radio Frequency
RFCM	Radio Frequency Countermeasures
RIS	Radio Integration System
ROP	Remote Observation Post
RSTA	Reconnaissance, Surveillance, and Targeting Acquisition
RWR	Radar Warning Receiver
SA	Surface-to-Air
SAFC	Special Applications for Contingencies
SAPNET	Special Access Program Network
SATCOM	Satellite Communications
SBIR	Small Business Innovative Research
SBUD	Simulator Block Updates
SCE	Special Communications Enterprise
SCO	SOF Cryptologic Operator
SDB	Small Diameter Bomb
SDN	SOF Deployable Node
SDN-EP	SOF Deployable Node--Extension Packages
SDN-H	SOF Deployable Node-Heavy
SDN-L	SOF Deployable Node-Light
SDN-M	SOF Deployable Node-Medium

ACRONYMS

SDV	Sea, Air, Land (SEAL) Delivery Vehicle
SEAL	Sea, Air, Land
SEALION	Sea, Air, Land, Insertion Observation Neutralization
SFAC	Security Forces Assistance Craft
SGM	Small Glide Munition
SIE	Special Operations Forces Information Environment
SIGINT	Signals Intelligence
SIL	System Integration Lab
SIM	Sensor Integration Module
SIRFC	Suite of Integrated Radio Frequency Countermeasures
SKR	Silent Knight Radar
SMS	Special Mission System
SOCRATES	Special Operations Command, Research, Analysis and Threat Evaluation System
SOF	Special Operations Forces
SOF-P	Special Operations Forces--Peculiar
SOFNET	Special Operations Forces Network
SOFPREP	Special Operations Forces Planning, Rehearsal, and Execution Preparation
SOFA	Special Operations Forces Support Activity
SOMPE	Special Operations Mission Planning and Execution
SOPGM	Standoff Precision Guided Munitions
SoS	System of Systems
SPCOM	Special Communications Field Segment - Enterprise
SPEAR	SOF Personal Equipment Advanced Requirements
SPPN	Special Purpose Processing Node
SMU	Special Mission Units
SR	Special Reconnaissance
SRTV	Secure Real-Time Video
SSE	Sensitive Site Exploitation
STAMP	SOCOM Tactical Airborne Multi-Sensor Platform
STC	SOF Tactical Communications
STLD	Small Target Location Devices
STTR	Small Business Technology Transfer

ACRONYMS

STUAS	Small Tactical Unmanned Aerial Systems
SURG	Suppressed Upper Receiver Group
SWAP	Size, Weight and Power
SWCS	Shallow Water Combat Submersible
SWIR	Shortwave Infrared
TACLAN	Tactical Local Area Network
TAK	Tactical Assault Kit
TALOS	Tactical Assault Lightweight Operator Suit
TAS	Threat Awareness System
TCCC	Tactical Combat Casualty Care
TDL	Tactical Data Link
TENCAP	Tactical Exploitation of National Capabilities
TF/TA	Terrain Following/Terrain Avoidance
TOCNET	Tactical Operations Center
TMN	Tactical (Airborne) Mission Network
TMS	Tactical Mission Systems
TMMR	Technology Maturation and Risk Reduction
TPAN	Tactical Personal Area Networks
TRL	Technical Readiness Level
TSOC	Theater Special Operations Command
TTV	Team Transportable Variant
TTL	Tagging, Tracking and Locating
TV	Television
TVS/RSTA	Tactical Video System/Reconnaissance, Surveillance, and Target Acquisition
UARC	University Affiliated Research Agreement
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
UGS/UMS	Unattended Ground Sensors/Unattended Maritime Sensors
UHF	Ultra High Frequency
UI	User Interface
URG	Upper Receiver Groups
VAK	Virtual Accompany Kits

ACRONYMS

VAS	Visual Augmentation Systems
VAS-BM	Visual Augmentation-Binocular-Monocular
VASWA	Visual Augmentation System-Weapons Accessories
VBIED	Vehicle-Borne Improvised Explosive Device
VBL	Visible Bright Light
VBSS	Visit, Board, Search, and Seizure
VHF	Very High Frequency
VTC	Video Teleconferencing
VTOL	Vertical Take Off and Landing
WAN	Wide Area Network
WPAN	Wireless Personal Area Networks
WPNAC	Weapons Accessories

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 1160401BB / <i>SOF Technology Development</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	552.604	34.635	37.569	42.464	-	42.464	45.304	46.274	47.388	48.336	Continuing	Continuing
S100: <i>SOF Technology Development</i>	552.604	34.635	37.569	42.464	-	42.464	45.304	46.274	47.388	48.336	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element enables United States Special Operations Command (USSOCOM) to conduct studies and develop laboratory prototypes for applied research and advanced technology development, as well as leverage other organizations' technology projects that may not otherwise be affordable within MFP-11. Applying small incremental amounts of investments to Department of Defense (DoD), other government agencies, and commercial organizations allows USSOCOM to influence the direction of technology development or the schedule against which it is being pursued, and to acquire emerging technologies for Special Operations Forces (SOF). This project provides an investment strategy for USSOCOM to link technology opportunities with capability deficiencies, capability objectives, technology thrust areas, human endurance and sensory performance, and technology development objectives.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	35.921	40.569	46.674	-	46.674
Current President's Budget	34.635	37.569	42.464	-	42.464
Total Adjustments	-1.286	-3.000	-4.210	-	-4.210
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.286	-			
• Other Adjustment	-	-	-4.210	-	-4.210

Change Summary Explanation

Funding:

FY 2019: Decrease of \$1.286 million is due to transfer of funds to Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) programs.

FY 2020: Decrease of \$3.000 million is due to a Congressional directed reduction due to underexecution.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 2: Applied Research	R-1 Program Element (Number/Name) PE 1160401BB / SOF Technology Development	
<p>FY 2021: Decrease of \$4.210 million is due to a comprehensive analysis of future capability by USSOCOM resulting in a reduction of technology concept demonstrations, prototyping, and evaluation of advanced capabilities to better align with the Department's priorities as outlined in the National Defense Strategy (-\$4.210 million).</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 2					R-1 Program Element (Number/Name) PE 1160401BB / SOF Technology Development				Project (Number/Name) S100 / SOF Technology Development			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S100: SOF Technology Development	552.604	34.635	37.569	42.464	-	42.464	45.304	46.274	47.388	48.336	Continuing	Continuing
A. Mission Description and Budget Item Justification												
This project conducts studies and develops laboratory prototypes for applied research and advanced technology developments, and leverages other organizations' technology projects that may not otherwise be affordable within MFP-11. Small incremental co-investments with Department of Defense (DoD), other government agencies, and commercial organizations allow USSOCOM to influence the schedule and direction of technology developments, emerging technologies, and capabilities for Special Operations Forces (SOF), with significant economies of investment. This USSOCOM investment strategy is used to link technology opportunities with capability deficiencies, capability objective, technology thrust areas, and technology objectives. Technology development needs in these areas may be advertised to industry and government research and development agencies via agency announcements and calls for white papers.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2019	FY 2020	FY 2021	
Title: SOF Technology Development									15.833	17.967	38.389	
Description: This project conducts studies and develops laboratory prototypes for applied research and advanced technology developments, and leverages other organizations' technology projects that may not otherwise be affordable within MFP-11. Beginning in FY 2021, this project will continue to exploit and integrate emerging technologies for sensors and surveillance enabling systems. Increases focus on tactical sensors and enabling technologies in support of the Intelligence, Surveillance, and Reconnaissance (ISR) mission set focused leading edge technology, biometric and biotechnology, which is directed towards the development of revolutionary tags, taggants, sensors, communications, and data processing.												
FY 2020 Plans: Continue ongoing technology development projects in areas such as, but not limited to: enabling power technologies, signature reduction technologies, high data-rate throughput, and advances in lightweight armor and materials. Advance technologies for combat medical equipment, biotechnologies, tactics, human performance, optics, sensor, information sources, and processing improvements, improve human-machine interfaces and display, identify SOF specific machine learning/artificial intelligence, and secure communications. Continue pursuit of methods to reduce operator load and provide advanced protection. Develop technologies for improved and widened window of target engagement (escalation of force), pursue enhancements to technologies that can aid in detection of enemy intentions and status, and continue development and exploration of novel technologies across the electromagnetic spectrum. Based upon agreed technology maturity metrics, transfer successful projects into programs of record. Continue the integration of critical technologies focused on providing the dismounted special operator leap-ahead capabilities via innovative collaborative processes.												
FY 2021 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 1160401BB / SOF Technology Development	Project (Number/Name) S100 / SOF Technology Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Continues ongoing technology development projects in areas such as, but not limited to: enabling power technologies, signature reduction technologies, high data-rate throughput, and advances in lightweight armor and materials. Advances technologies for combat medical equipment, biotechnologies, tactics, human performance, optics, sensor, information sources, and processing improvements, improves human-machine interfaces and displays, identifies SOF specific machine learning/artificial intelligence, and secure communications. Continues pursuit of methods to reduce operator load and provides advanced protection. Develops technologies for improved and widened window of target engagement (escalation of force), pursues enhancements to technologies that can aid in detection of enemy intentions and status, and continues development and exploration of novel technologies across the electromagnetic spectrum. Continues to exploit and integrate emerging technologies for sensors and surveillance enabling systems. Increases focus on tactical sensors and enabling technologies in support of the Intelligence, Surveillance, and Reconnaissance mission set. Based upon agreed technology maturity metrics, transfers successful projects into programs of record. Continues the integration of critical technologies focused on providing the dismounted special operator leap-ahead capabilities via innovative collaborative processes. FY 2020 to FY 2021 Increase/Decrease Statement: Net Increase of \$20.422 million is due to an increase for the integration of SOF Tagging, Tracking, and Locating Technologies (TTL) Project (\$15.862 million) and increase for the integration of Artificial Intelligence (AI) and biotechnologies (\$4.560 million).				
Title: Tagging, Tracking, and Locating Technologies (TTL) Project Description: TTL funds Applied Research projects identified in the USSOCOM Quick Look Capabilities Based Assessments (QL-CBA). TTL applies Intelligence, Surveillance, and Reconnaissance (ISR) focused leading edge technology, biometric and biotechnology, which is directed towards the development of revolutionary tags, taggants, sensors, communications, and data processing in support of the TTL mission. FY 2020 Plans: Complete projects to exploit technology, biotechnology and chemistry for application to TTL and TTL-enabling systems. Complete projects linked to the USSOCOM/DoD TTL and ISR Roadmaps, which are updated via the Joint Chief of Staff (JCS)/J8-approved annual TTL QL-CBA. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$15.956 million is due to the transition to the SOF Special Technology Project.		15.008	15.956	-
Title: Classified Sub-Project Description: Classified Sub-Project (provided under separate cover). FY 2020 Plans:		3.794	3.646	4.075

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 1160401BB / <i>SOF Technology Development</i>	Project (Number/Name) S100 / <i>SOF Technology Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
Details provided under separate cover.			
FY 2021 Plans: Details provided under separate cover.			
FY 2020 to FY 2021 Increase/Decrease Statement: Details provided under separate cover.			
Accomplishments/Planned Programs Subtotals		34.635	42.464
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>					R-1 Program Element (Number/Name) PE 1160402BB / <i>SOF Advanced Technology Development</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	1,377.147	77.010	99.404	89.072	-	89.072	94.659	96.485	98.602	100.486	Continuing	Continuing
S200: <i>Advanced Technology Development</i>	1,315.751	56.107	72.960	69.985	-	69.985	75.263	76.772	78.523	80.098	Continuing	Continuing
SF101: <i>Engineering Analysis</i>	37.384	16.475	21.845	19.087	-	19.087	19.396	19.713	20.079	20.388	Continuing	Continuing
S225: <i>Information and Broadcast Systems Adv Tech</i>	24.012	4.428	4.599	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Advanced Technology Development (project S200) conducts rapid prototyping and Advanced Technology Demonstrations (ATDs). ATDs provide a means for demonstrating and evaluating the utility of emerging/advanced technologies in as realistic an operational environment as possible by Special Operations Forces (SOF) users. Evaluation results are included in a transition package, which assists in the initiation of or insertion into an acquisition program. ATDs also address projects that are a result of unique joint special mission or area-specific needs for which a few-of-a-kind prototypes must be developed on a rapid response basis, or of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase.

Engineering Analysis (project SF101) provides rapid response capability for the investigation, evaluation, and demonstration of technologies for SOF platform (ground, air, and maritime) and soldier system-unique requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: sensor integration; enhanced situational awareness; near-real-time intelligence to include data fusion, threat detection and avoidance; electronic support measures for threat geo-location and specific emitter identification; navigation; target detection; weapon performance integration; and future SOF platform and soldier system requirements. Provides additional engineering analysis and testing required to transition items from national forces to theater forces.

Information and Broadcast Systems Advanced Technology (project S225) conducts rapid prototyping, advanced technology demonstrations, and advanced concept technology demonstrations of information and broadcast systems technology. Includes planning, analyzing, evaluating, and production information systems capabilities and distribution/dissemination broadcast systems capabilities. It provides a means for demonstrating and evaluating the utility of emerging/advanced technologies in as realistic an operational environment as possible by SOF users. This project also integrates efforts with each other and conducts technology demonstrations in conjunction with joint experiments and other assessment events. Evaluation results are included in a transition package, which assists in the initiation of or insertion into an acquisition program. The project also addresses unique, joint special mission or area-specific needs for which prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 1160402BB / <i>SOF Advanced Technology Development</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	79.380	89.154	100.729	-	100.729
Current President's Budget	77.010	99.404	89.072	-	89.072
Total Adjustments	-2.370	10.250	-11.657	-	-11.657
• Congressional General Reductions	-0.030	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.250			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.500	-			
• SBIR/STTR Transfer	-2.840	-			
• Other Adjustments	-	-	-11.657	-	-11.657

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: S200: *Advanced Technology Development*

Congressional Add: *Classified Project*

Congressional Add Subtotals for Project: S200

Project: SF101: *Engineering Analysis*

Congressional Add: *Soldier System Engineering Analysis*

Congressional Add Subtotals for Project: SF101

Congressional Add Totals for all Projects

FY 2019	FY 2020
-	6.000
-	6.000
-	4.250
-	4.250
-	10.250

Change Summary Explanation

Funding:

FY 2019: Net decrease of \$2.370 million is due to a transfer of funds to support emerging command priorities (-\$0.030 million), Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) programs (-\$2.490 million for SBIR and -\$0.350 million for STTR), and transfer from Program Element 110604BB, Aviation Systems (\$0.500 million).

FY 2020: Net increase of \$10.250 million is due to Congressional Adds for Ballistic and Laser Protective Eyewear (\$4.250 million) and Identity Management (\$6.000 million).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)	R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development	
<p>FY 2021: Net decrease of \$11.657 million is due to the transition of funds to Program Element 1160431BB, Warrior Systems, (-\$4.599 million); decrease for the transition of funds to Program Element 1160403BB, Aviation Systems or Aviation Engineering Analysis (-\$3.947 million), increase to support the integration of technology within the Experimentation Force Project (\$4.000 million), and minor adjustments (-\$0.110 million). For the Defense Wide Review, USSOCOM performed a comprehensive analysis of future capability and is reducing SOF Advanced Technology concept demonstrations, prototyping, and evaluation of advanced capabilities to better align with the Department's priorities as outlined in the National Defense Strategy (-\$7.001 million).</p> <p>.</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development				Project (Number/Name) S200 / Advanced Technology Development			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S200: Advanced Technology Development	1,315.751	56.107	72.960	69.985	-	69.985	75.263	76.772	78.523	80.098	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides for rapid prototyping, Advanced Technology Demonstrations (ATDs) and Joint Capability Technology Demonstrations. It is a means for demonstrating and evaluating the utility of emerging/advanced technologies in operationally relevant environments with Special Operations Forces (SOF) users. This project integrates emerging technologies and presents them in technology demonstrations, in conjunction with joint experiments and other assessment events. Evaluation results often facilitate the initiation of new programs and the insertion of appropriate technologies to acquisition programs. The element also addresses unique, joint special mission or area-specific needs for which a few rapid prototypes must be developed on a responsive basis, or of sufficient time sensitivity to accelerate prototyping efforts of a normal acquisition program in any phase.

B. Accomplishments/Planned Programs (\$ in Millions)

Title: SOF Special Technology Project	FY 2019	FY 2020	FY 2021
<p>Description: This project integrates emerging technologies and presents them in technology demonstrations, in conjunction with joint experiments and other assessment events. Beginning in FY 2021 this project will continue to exploit and integrate emerging technologies for sensors and surveillance enabling systems. Increases focus on tactical sensors and enabling technologies in support of the Intelligence, Surveillance, and Reconnaissance (ISR) mission set focused leading edge technology, biometric and biotechnology, which is directed towards the development of revolutionary tags, taggants, sensors, communications, and data processing.</p> <p>FY 2020 Plans: Continue the development and insertion of technology into existing programs. Technologies include, but are not limited to: reduced signature profiles, improved tailorable lethality and precision strike weapons, assured communications, command and control systems, machine learning/artificial intelligence, optics, sensors, information sources, and situational awareness tools; lightweight armor and materials, power and energy enablers, and technologies that reduce the load of the operator. Continue development of technologies supporting undersea, ground and air mobility. Evaluate and develop sensors across the electromagnetic spectrum to meet operational requirements. Continue the integration of critical technologies focused on providing the dismounted special operator leap-ahead capabilities via innovative collaborative processes. Continue to develop sensors, surveillance, network and data management technology to provide tactically relevant situational awareness and point of need. Continue effort for field prototype system incorporating technologies likely to transition to fielded systems. Based upon agreed</p>	31.886	41.118	63.940

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development	Project (Number/Name) S200 / Advanced Technology Development	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
<p>technology maturity metrics, transfers successful projects into programs of record, and conducts field experimentations at various venues to facilitate technology insertion.</p> <p>FY 2021 Plans: Continues the development and insertion of technology into existing programs. Technologies include, but are not limited to: reduced signature profiles, improved tailorable lethality weapons and precision strike weapons, assured communications, command and control systems, machine learning/artificial intelligence, optics, sensors, information sources, and situational awareness tools; lightweight armor and materials, power and energy enablers, and technologies that reduce the load of the operator. Continues the development of technologies and materials which support power and energy enablers, and technologies that reduce the load of the operator. Continues development of technologies supporting undersea, ground and air mobility. Evaluates and develops sensors across the electromagnetic spectrum to meet operational requirements. Continues the integration of critical technologies focused on providing the dismounted special operator leap-ahead capabilities via innovative collaborative processes. Continues to develop sensors, surveillance, network and data management technology to provide tactically relevant situational awareness and point of need. Continues effort for field prototype system incorporating technologies likely to transition to fielded systems. Beginning in FY 2021, this project will continue to exploit and integrate emerging technologies for sensors and surveillance enabling systems. Increases focus on tactical sensors and enabling technologies in support of the ISR mission set focused leading edge technology, biometric and biotechnology, which is directed towards the development of revolutionary tags, taggants, sensors, communications, and data processing. Based upon agreed technology maturity metrics, transfers successful projects into programs of record, and conducts field experimentations at various venues to facilitate technology insertion.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Net increase of \$22.822 million due to an increase for the integration with SOF Tagging, Tracking, and Locating Technologies (TTL) Project (\$21.926 million) and integration of Artificial Intelligence and Biotechnologies (\$0.896 million).</p>			
<p>Title: Tagging, Tracking, and Locating Technologies (TTL) Project</p> <p>Description: TTL funds SOF unique ATDs identified in the USSOCOM Quick Look Capabilities Based Assessments (QL-CBA). TTL rapidly prototypes and expeditiously transitions projects from laboratory to acquisition Programs of Record/operational use to address SOF capability deficiencies.</p> <p>FY 2020 Plans: Continue to exploit and integrate recently-proven and emerging technologies for TTL and TTL-enabling systems. Continue to mature technologies that are linked to the USSOCOM/DoD TTL Roadmap, which is updated via the Joint Chiefs of Staff (JCS)/J8-</p>		18.079	19.915
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development	Project (Number/Name) S200 / Advanced Technology Development	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
approved annual TTL QL-CBA. Continue to increase focus on tactical sensors and enabling technologies in support of the special reconnaissance mission set.			
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$19.915 million is due to the integration of the SOF Tagging, Tracking, and Locating Technologies (TTL) Project into the SOF Special Technology Project.			
Title: Classified Project		6.142	5.927
Description: Classified Project (provided under separate cover).			
FY 2020 Plans: Details provided under separate cover.			
FY 2021 Plans: Details provided under separate cover.			
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.118 million will be provided under separate cover.			
Accomplishments/Planned Programs Subtotals		56.107	66.960
		FY 2019	FY 2020
Congressional Add: Classified Project		-	6.000
FY 2020 Plans: Details provided under separate cover.			
Congressional Adds Subtotals		-	6.000
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development				Project (Number/Name) SF101 / Engineering Analysis			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
SF101: Engineering Analysis	37.384	16.475	21.845	19.087	-	19.087	19.396	19.713	20.079	20.388	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides a rapid response capability to support Special Operations Forces (SOF) platforms (ground, air and maritime), Unmanned Aerial Vehicle (UAV) payload sensors and soldier systems. The purpose is to correct system deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies, analysis of alternatives, pre-developmental risk reduction studies, and engineering analyses. This project provides the engineering required to improve the design and performance integrity of the SOF platforms, UAV payload sensors and soldier support systems, sub-systems, equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, materiel improvements, and service life extensions. This project also conducts risk reduction studies, analyses, and demonstrations to support emerging, time-critical weapons and sensor enhancements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Platform Engineering Analysis Description: Funding supports the development of rapid response capabilities to support SOF platform and soldier systems. Rapidly addresses technology needs for insertion into Programs of Record. Supports technology development to correct system deficiencies, improve platform asset life, and enhance mission capabilities. FY 2020 Plans: Continue to assess concepts and prototypes that provide increased capability of air, ground and undersea mobility platforms to include improvements to meet emerging threats. Assess and evaluate advanced methods to deliver tailorable lethality. Identify, assess, and evaluate improved network and data management systems that incorporate significant improvements to operate in contested environments, systems that improve situational awareness on the battlefield, and disruptive technologies to enable Intelligence, Surveillance, and Reconnaissance (ISR) in future environments. FY 2021 Plans: Future Platform Engineering Analysis efforts will continue under the Engineering Analysis Project. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$10.192 million is due to the consolidation and integration of technology insertion funding to the Engineering Analysis Project.	11.452	10.912	0.000
Title: Soldier System Engineering Analysis Description: Funding supports engineering assessments and evaluation of technology readiness in the following areas: 1) next generation lightweight low-cost body armor and ballistic helmets 2) ballistic and laser variable light transmission protective eyewear 3) soldier worn sensors to assess ballistic and blast events as well as soldier health 4) next generation soldier worn	0.472	0.500	-

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development	Project (Number/Name) SF101 / Engineering Analysis		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
load carriage systems and 5) soldier worn head borne communications that provide greater situational awareness and hearing protection. FY 2020 Plans: Continue to assess materials, concepts and prototypes to reduce soldier load and provide increased protection against the latest emerging threats. Evaluate soldier worn sensors and heads up displays for operability within soldier worn components and subsystems. Assess technology feasibility and integration readiness of next generation load carriage systems such as exoskeletons and load-assist devices. Assess proofs of concept and technologies for next generation communications systems that integrate situational awareness in all environments. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.500 million is due to the consolidation and integration of Future Soldier System Engineering Analysis efforts into the Engineering Analysis Project.				
Title: National to Theater Engineering Analysis Description: Provides additional engineering analysis and testing required to transition items from national forces to theater forces. FY 2020 Plans: Conduct additional testing and evaluation required on various equipment items such as communications, intelligence, weapons, and operator protection planned for transition to SOF Theater Forces. FY 2021 Plans: Conducts additional testing and evaluation required on various equipment items such as communications, intelligence, weapons, and operator protection planned for transition to SOF Theater Forces. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.045 million is for minor adjustments.		0.726	2.236	2.281
Title: Aviation Mission Improved Survivability Description: Funding supports engineering analysis activities to address aviation survivability such as signature management, situational awareness, and versatile mission equipment (payloads, communications, and weapons) to achieve SOF mission objectives. FY 2020 Plans:		3.825	3.947	-

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development	Project (Number/Name) SF101 / Engineering Analysis	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
Continue engineering analysis activities to improve SOF aviation mission survivability. Activities include, but are not limited to, signature management (acoustic, infrared, radio frequency), situational awareness with full spectrum threat warning and countermeasures, and versatile mission equipment (payloads, communications, and weapons) to improve SOF survivability in less than permissive operating environments. Proof of concepts with potential from prior year will be further matured.			
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$3.947 million due to the integration of Future Aviation Mission Improved Survivability Project efforts into Aviation Systems (Program Element 1160403BB) under project SF100 Aviation Engineering Analysis (AEA).			
Title: Engineering Analysis		0.000	0.000
Description: Funding supports the development of rapid response capabilities to support SOF platform and soldier systems. Supports technology development to correct system deficiencies, improve platform asset life, and enhance mission capabilities. Supports engineering assessments and evaluation of technology feasibility, producibility, and integration into next generation soldier equipment. Supports engineering analysis activities to address platform survivability such as signature management, situational awareness, and versatile mission equipment (payloads, communications, and weapons) to achieve SOF mission objectives. Rapidly addresses technology needs for insertion into Programs of Record.			12.806
FY 2020 Plans: N/A			
FY 2021 Plans: Begins to assess concepts and prototypes that provide increased capability of SOF mobility platforms to include improvements to meet emerging threats. Assesses and evaluates advanced methods to deliver tailorable lethality. Identifies, assesses, and evaluates improved network and data management systems that incorporate significant improvements to operate in contested environments, systems that improve situational awareness on the battlefield, and disruptive technologies to enable ISR in future environments. Continues to assess materials, concepts, and prototypes to increase operator effectiveness and situational awareness in all environments. Continues engineering analysis activities to improve SOF platform mission survivability. Activities include, but are not limited to, signature management (acoustic, infrared, radio frequency), situational awareness with full spectrum threat warning and countermeasures, and versatile mission equipment (payloads, communications, and weapons) to improve SOF survivability in less than permissive operating environments.			
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$12.806 million due to the consolidation and integration of technology insertion funding from Platform Engineering Analysis and Soldier System Engineering Analysis Projects.			
Title: Experimentation Force		0.000	0.000
			4.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / <i>SOF Advanced Technology Development</i>	Project (Number/Name) SF101 / <i>Engineering Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
<p>Description: Funding supports the integration of technology with operational vignette-based experiments designed to stimulate innovative applications across all domains addressing SOF specific modernization needs.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Begins the development of innovative concepts and conducts experimentation to develop hyper-enabled teams capable of conducting globally integrated special operations across all domains.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$4.000 million due to funding the development of the Experimentation Force infrastructure.</p>			
Accomplishments/Planned Programs Subtotals		16.475	17.595
		FY 2019	FY 2020
Congressional Add: Soldier System Engineering Analysis		-	4.250
<p>FY 2020 Plans: Continue to assess materials, concepts and prototypes to reduce soldier load and provide increased protection against the latest emerging threats. Evaluate soldier worn sensors and heads up displays for operability within soldier worn components and subsystems. Assess technology feasibility and integration readiness of next generation load carriage systems such as exoskeletons and load-assist devices. Assess proofs of concept and technologies for next generation communications systems that integrate situational awareness in all environments.</p>			
Congressional Adds Subtotals		-	4.250
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 1160402BB / SOF Advanced Technology Development				Project (Number/Name) S225 / Information and Broadcast Systems Adv Tech			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S225: Information and Broadcast Systems Adv Tech	24.012	4.428	4.599	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project conducts development, rapid prototyping, and demonstration/testing of information and broadcast system technology. Includes cyber capabilities that predict the best media channels to reach potential target audiences, data mining and information collections tools, propaganda and social behavior analytical tools, cultural analysis tool sets and emerging technologies that support the planning and analytical needs for Military Information Support Operations (MISO) forces. It provides a means for demonstrating and evaluating the utility of emerging/advanced technologies in as realistic an operational environment as possible by SOF users. This project integrates efforts and conducts technology demonstrations in conjunction with joint experiments and other assessment events and performs market research on emerging technologies that support all phases of MISO. Evaluation results are included in a transition package, which assists in the initiation of or insertion into an acquisition program. The project also addresses unique, joint special mission or area-specific needs. Seeks technologies that will transform current MISO capabilities through two major objectives: 1) Exploit technologies capable of disseminating products to reach target audiences across a variety of media to include audiences in denied areas. 2) Automate and improve MISO planning and analytical capability through technologies that are integrated into SOF planning systems (Cultural Analysis, Targeting, Theme Development, Media & Product Selection, Distribution & Dissemination, and Measures of Effectiveness). Develops software applications that increases the efficiency and shortens the timeline to get MISO dissemination packages approved. Develops hardware/software tools that facilitate the collaboration and sharing of information and other critical data.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Broadcast and Dissemination Modernization	4.428	4.599	-
Description: Develops emerging technologies available in the marketplace to transform and modernize planning, analysis, development, broadcast, distribution, dissemination, and feedback capabilities for MISO forces. This initiative will also continue development of appropriate emerging technologies initially identified by Advance Technology Demonstrations and Joint Capability Technology Demonstrations to transition to acquisition programs. Technologies include: multi-frequency broadcast systems; digital broadcast capabilities; remote controlled electronic paper; near-real-time command and control of unattended systems, especially in denied areas; focused/beam speaker sound technologies; visual projection technologies; advanced commercial broadcast technologies including amplitude modulation and frequency modulation radio transmitters and antenna; television transmitter and antenna systems; internet and telephony dissemination and broadcast systems; technologies capable of long-loiter broadcast and delivery in denied and permissive environment; and technologies that automate and improve planning and analytical capability through integrated capabilities.			
FY 2020 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 1160402BB / <i>SOF Advanced Technology Development</i>	Project (Number/Name) S225 / <i>Information and Broadcast Systems Adv Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Continue performance of engineering studies, development, and demonstrations of planning, analysis, distribution, and broadcast capabilities in the digital domain.				
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Decrease of \$4.599 million is due to funding being transitioned to PE 1160431BB, Warrior Systems.				
Accomplishments/Planned Programs Subtotals		4.428	4.599	-
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0305208BB / Distributed Common Ground/Surface Systems							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	48.714	6.286	6.359	6.066	-	6.066	6.179	6.290	6.412	6.047	Continuing	Continuing
S400A: Distributed Common Ground/Surface Systems	48.714	6.286	6.359	6.066	-	6.066	6.179	6.290	6.412	6.047	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element is part of the Military Intelligence Program (MIP). The Distributed Common Ground/Surface System Special Operations Forces (DCGS-SOF) is part of a family of systems providing Intelligence, Surveillance, and Reconnaissance (ISR) Processing, Exploitation, Dissemination (PED), and analytical capabilities at the Component/Theater Special Operations Commands (TSOC) level and below through a combination of reach back, forward support, and collaboration. The mission tailored infrastructure interconnects the warfighters, analysts, and sensors to find and fix High Value Targets and provides a network-enabled, interoperable construct allowing continual, unimpeded sharing of intelligence data, information and services with SOF and between the Services, other national intelligence agencies, combatant commands and multi-national partners. It connects the SOF warfighters and support analysts with essential intelligence information and provides situational awareness information to SOF leadership at all echelons. The three components of DCGS-SOF include the following: Enterprise/All Source Information Fusion (ENT/ASIF) provides infrastructure, processing, and intelligence analytical tools to allow for worldwide SOF intelligence information sharing via a globally connected cloud based architecture as well as a forward disconnected capability. SOF Geospatial Intelligence Processing, Exploitation, and Dissemination (SGIP) provides capabilities in garrison and deployed environments for the PED of manned and unmanned sensors. SOF Signals Intelligence (SIGINT) Processing, Exploitation, Dissemination (PED) provides SIGINT exploitation capability in both garrison and deployed environments. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	6.286	6.359	6.487	-	6.487
Current President's Budget	6.286	6.359	6.066	-	6.066
Total Adjustments	0.000	0.000	-0.421	-	-0.421
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.421	-	-0.421

Change Summary Explanation

Funding:
FY 2019: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0305208BB / Distributed Common Ground/Surface Systems	
<p>FY 2020: None.</p> <p>FY 2021: Net decrease of \$0.421 million is due to rebaseline of funding to continue rapid integration and user testing of emerging standards and technology in the Integrated Survey Program (ISP) (-\$0.380 million).</p> <p>For the Defense Wide Review (DWR), USSOCOM performed a comprehensive analysis of future capabilities and is streamlining contract support costs as a result of better buying power initiatives which aligns with the Department's priorities as outlined in the National Defense Strategy (-\$0.041 million).</p> <p>Schedule: Market research results and the pivot to the National Reconnaissance Office (NRO) Fusion Analysis and Development Effort (FADE) platform modifies technology development objectives and timelines. Modernization efforts with SGIP and SOF SIGINT PED modify technology development objectives and timelines.</p> <p>Technical: Usability testing and requirements refinement led to market research and technology shifts across DCGS-SOF.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0305208BB / <i>Distributed Common Ground/Surface Systems</i>				Project (Number/Name) S400A / <i>Distributed Common Ground/Surface Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S400A: <i>Distributed Common Ground/Surface Systems</i>	48.714	6.286	6.359	6.066	-	6.066	6.179	6.290	6.412	6.047	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program element is part of the Military Intelligence Program (MIP). The Distributed Common Ground/Surface System Special Operations Forces (DCGS-SOF) is part of a family of systems providing Intelligence, Surveillance and Reconnaissance (ISR) Processing, Exploitation, Dissemination (PED), and analytical capabilities at the Component/Theater Special Operations Commands (TSOC) level and below through a combination of reach back, forward support, and collaboration. The mission tailored infrastructure interconnects the warfighters, analysts, and sensors to find and fix High Value Targets and provides a network-enabled, interoperable construct allowing continual, unimpeded sharing of intelligence data, information and services with SOF and between the Services, other national intelligence agencies, combatant commands and multi-national partners. It connects the SOF warfighters and support analysts with essential intelligence information and provides situation awareness information to SOF leadership at all echelons. The three components of DCGS-SOF include the following: Enterprise All Source Information Fusion (ENT/ASIF) provides infrastructure, processing, and intelligence analytical tools to allow for worldwide SOF intelligence information sharing via a globally connected cloud based architecture as well as a forward disconnected capability. SOF Geospatial Intelligence Processing, Exploitation, and Dissemination (SGIP) provides capabilities in garrison and deployed environments for the PED of manned and unmanned sensors. SOF Signals Intelligence (SIGINT) Processing, Exploitation, Dissemination (PED) provides SIGINT exploitation capability in both garrison and deployed environments.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: DCGS	6.286	6.359	6.066
Description: DCGS-SOF is composed of three major components: Enterprise/ASIF, SGIP and SOF SIGINT PED. DCGS-SOF develops and integrates SOF networks providing USSOCOM with unique decision capabilities to include: measurement and signature data, sensor exploitation, data compressions and man-portable workstations. DCGS-SOF provides the supporting architecture to link the Global Sensor Network to those who will interpret the data for rapid transmission to collaborative partners via the SOF Information Environment (SIE).			
FY 2020 Plans: Continue tech development, integration of emerging technologies and capabilities enhancements for DCGS-SOF ENT/ASIF requirements including but not limited to: Advanced analytics, User Interfaces (UI), cloud computing, machine learning, disconnected operations capability and completion of current Natural Language Processing (NLP) efforts. Continue tech development and integration of emerging technologies for SGIP. Enhances SGIP capabilities including but not limited to next generation analytics processing, and finishes speech to text analyst tool upgrades. Continue SOF SIGINT PED language enhancements. Continue DCGS-SOF Limited Objective Events and exercise participation to test emerging tech integration			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 0305208BB / <i>Distributed Common Ground/Surface Systems</i>				Project (Number/Name) S400A / <i>Distributed Common Ground/Surface Systems</i>				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2019	FY 2020	FY 2021
efforts. Continue interoperability improvements with Coalition partners and Joint Information Environment and begin compatibility development for the next generation Defense Intelligence Information Enterprise (DI2E) framework.												
FY 2021 Plans: Continues tech development, integration of emerging technologies and capabilities enhancements for DCGS-SOF ENT/ASIF requirements including but not limited to: Advanced analytics, User Interfaces (UI), cloud computing, machine learning, and disconnected operations capability. Continues tech development and integration of emerging technologies for SGIP and begins these same efforts for SOF SIGINT PED. Continues DCGS-SOF Limited Objective Events and exercise participation to test emerging tech integration efforts. Continues interoperability improvements with Coalition partners, DI2E framework and Joint Information Environment.												
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.293 million is due to better buying power initiatives as a result of commonality of integrating emerging technologies and software enhancements within Fusion Analysis and Development Effort (FADE) Department of Defense (DoD)/ Intelligence Community (IC) partners.												
Accomplishments/Planned Programs Subtotals										6.286	6.359	6.066
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• PROC/020401INTL: <i>Distributed Common Ground/Surface System</i>	18.597	12.522	11.645	-	11.645	13.316	13.591	14.009	14.222	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
DCGS-SOF leverages SOF programs, DoD and Intelligence Community partners, National labs, and other Government Agencies to integrate Commercial Off The Shelf/ Government Off The Shelf (COTS/GOTS), and other mature technologies into the Program of Record which will reside partially within the SOF Information Enterprise combined with Web-Client tools in a global cloud. These alliances enable more agile access to (searchable, discoverable) and sharing of larger data domains and services to meet SOF-peculiar documented requirements. The technology allows for seamless integration and federation with DoD, Interagency, and Coalition tactical Intelligence, Surveillance and Reconnaissance (ISR) PED systems. The DCGS-SOF program office employs an agile development process with capability insertions into the development baseline for assessment and future deployment into the operational baseline. All development requirements are prioritized through the DCGS Requirements Working Group (DRWG) chaired by J2. Once approved, the requirements are evaluated and scheduled by engineering development teams. Using this methodology allows capabilities to be inserted in a fast and agile manner based on user requirements and priorities. All Evolutionary Technology Insertions (ETIs) in the R-4 schedule are based on current program office projections. If requirements change based on the DRWG, the ETI and version capabilities identified may change.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0305208BB / Distributed Common Ground/Surface Systems				Project (Number/Name) S400A / Distributed Common Ground/ Surface Systems					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Integration - Enterprise / All Source Information Fusion (ENT/ASIF)	Various	Various : Various	10.648	2.347	Jan 2019	1.459	Jan 2020	2.957	Jan 2021	-		2.957	Continuing	Continuing	-
Capabilities Modernization - SOF Geospatial Intelligence Processing Exploitation, and Dissemination (SGIP)	Various	Various : Various	16.581	0.749	Jan 2019	2.500	Jan 2020	0.730	Jan 2021	-		0.730	Continuing	Continuing	-
Independent Verification and Validation - SOF Signals Intelligence Processing Exploitation, and Dissemination (SOF SIGINT PED)	MIPR	Various : Various	2.020	0.301	Mar 2019	0.615	Mar 2020	0.829	Mar 2021	-		0.829	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	1.788	-		-		-		-		-	0.000	1.788	-
Subtotal			31.037	3.397		4.574		4.516		-		4.516	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support (ENT/ ASIF)	C/FFP	SITEC : Various	5.077	1.646	Mar 2019	0.259	Mar 2020	1.100	Mar 2021	-		1.100	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	0.576	-		-		-		-		-	0.000	0.576	-
Subtotal			5.653	1.646		0.259		1.100		-		1.100	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0305208BB / Distributed Common Ground/Surface Systems				Project (Number/Name) S400A / Distributed Common Ground/ Surface Systems					
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Various : Various	1.956	-		0.854	Oct 2019	0.150	Oct 2020	-		0.150	Continuing	Continuing	-
Independent Verification and Validation	MIPR	Various : Various	3.175	0.295	Oct 2018	0.210	Oct 2019	-		-		-	0.000	3.680	-
Interoperability Support	MIPR	JITC : Ft Huachuca, AZ	1.860	0.225	Feb 2019	0.232	Feb 2020	0.300	Feb 2021	-		0.300	Continuing	Continuing	-
Interoperability Testing	C/FFP	SITEC : Various	5.033	0.723	Mar 2019	0.230	Mar 2020	-		-		-	Continuing	Continuing	-
Subtotal			12.024	1.243		1.526		0.450		-		0.450	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			48.714	6.286		6.359		6.066		-		6.066	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

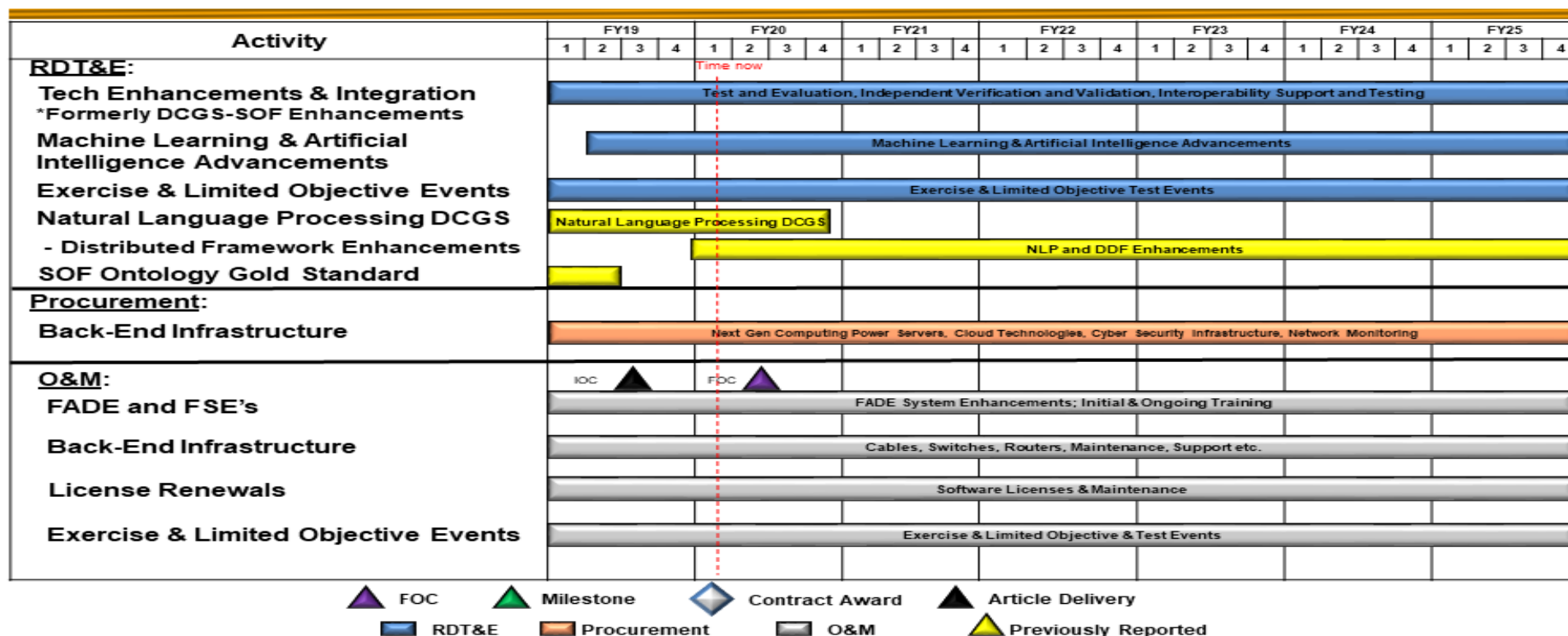
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 0305208BB / Distributed Common
Ground/Surface Systems

Project (Number/Name)
S400A / Distributed Common Ground/
Surface Systems

DCGS-SOF PEO-Managed Enterprise / ASIF Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

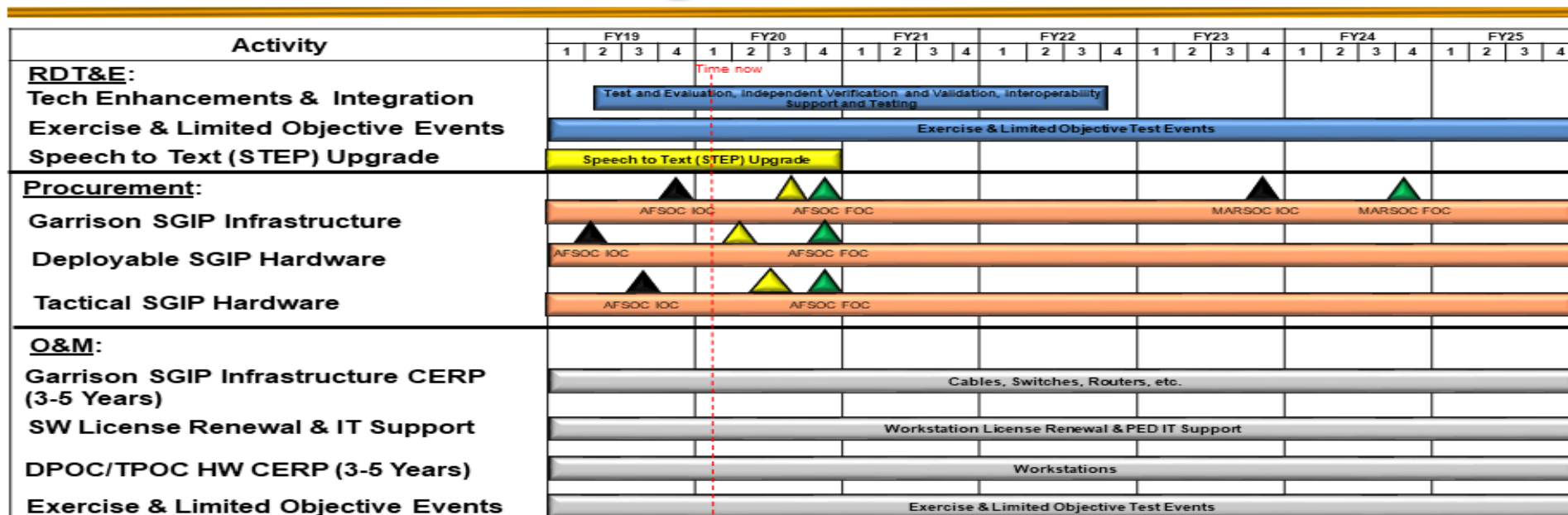
Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 0305208BB / Distributed Common
Ground/Surface Systems

Project (Number/Name)
S400A / Distributed Common Ground/
Surface Systems

DCGS-SOF

PEO-Managed SGIP Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305208BB / Distributed Common Ground/Surface Systems	Project (Number/Name) S400A / Distributed Common Ground/ Surface Systems	

DCGS-SOF PEO-Managed SOF SIGINT PED Schedule

Activity	FY19				FY20				FY21				FY22				FY23				FY24				FY25			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<u>RDT&E:</u>																												
Tech Enhancements & Integration																												
Exercise & Limited Objective Events																												
Language Enhancements																												
<u>Procurement:</u>																												
Communication SDNs																												
CERP (3 Years)																												
<u>O&M:</u>																												
Network Support Service																												
End User Support Service																												
Global Network Control Center																												
Garrison Partial CERP (3 Years)																												



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0305208BB / <i>Distributed Common Ground/Surface Systems</i>	Project (Number/Name) S400A / <i>Distributed Common Ground/Surface Systems</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Distributed Common Ground/Surface Systems - Enterprise/ASIF</i>				
Tech Enhancements & Integration	1	2019	4	2025
Machine Learning and Artificial Intelligence Advancements	2	2019	4	2025
Exercise & Limited Objective Events	1	2019	4	2025
<i>Distributed Common Ground/Surface Systems - SGIP</i>				
Tech Enhancements & Integration	2	2019	4	2022
Exercise & Limited Objective Events	1	2019	4	2025
<i>Distributed Common Ground/Surface Systems - SOF SIGINT PED</i>				
Tech Enhancements & Integration	1	2021	4	2023
Exercise & Limited Objective Events	1	2019	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	113.559	17.745	20.697	21.265	-	21.265	19.446	19.847	20.310	20.716	Continuing	Continuing
S851: MQ-9 Unmanned Aerial Vehicle (UAV)	113.559	17.745	20.697	21.265	-	21.265	19.446	19.847	20.310	20.716	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element identifies, develops, rapidly prototypes, integrates, and tests Special Operations Forces (SOF) - peculiar mission kits, mission payloads, weapons, and modifications on MQ-9 Unmanned Aerial Vehicles (UAVs), Ground Control Stations (GCSs), and training systems as a component of the Medium Altitude Long Endurance Tactical (MALET) program. USSOCOM is designated as the DoD lead for planning, synchronizing, and as directed, executing global operations against terrorist networks. USSOCOM requires the capability to find, fix, finish, exploit, and analyze time-sensitive high-value targets. These targets can often only be identified with patient collection of information and require rapid, decisive action during the short periods in which they present themselves. This program element addresses the primary areas of Intelligence, Surveillance, Reconnaissance, and Target (ISR&T) Acquisition, and Strike. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	18.403	20.697	21.265	-	21.265
Current President's Budget	17.745	20.697	21.265	-	21.265
Total Adjustments	-0.658	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.658	-			

Change Summary Explanation

Funding:

FY 2019: Decrease of -\$0.658 million is due to a transfer to Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) programs.

FY 2020: None.

FY 2021: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7:</i> <i>Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1105219BB / <i>MQ-9 Unmanned Aerial Vehicle (UAV)</i>	
<div style="margin-bottom: 20px;">Schedule: None.</div> <div>Technical: None.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)				Project (Number/Name) S851 / MQ-9 Unmanned Aerial Vehicle (UAV)			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S851: MQ-9 Unmanned Aerial Vehicle (UAV)	113.559	17.745	20.697	21.265	-	21.265	19.446	19.847	20.310	20.716	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
As the supported combatant command in global operations, USSOCOM requires the capability to find, fix, finish, exploit, and analyze time-sensitive high-value targets. These targets can often only be identified with patient collection of information and require rapid, decisive action during the short periods in which they present themselves. This project addresses the primary areas of Intelligence, Surveillance, Reconnaissance, and Target (ISR&T) Acquisition and Strike. The majority of the developmental funds provides for the Operational Flight Software (OFP) for the aircraft, Ground Control Station, and Turret. SOF peculiar modifications to the OFP allow for a rapid integration of emerging capabilities in order to maintain relevance and dominance of the MQ-9 in support of the National Defense Strategy.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2019	FY 2020	FY 2021	
Title: MQ-9 UAV									17.745	20.697	21.265	
Description: Identifies, develops, integrates, and tests Special Operations Forces (SOF)-peculiar mission kits, mission payloads, weapons, and modifications on MQ-9 Unmanned Aerial Vehicles (UAVs), Ground Control Stations (GCSs), and training systems.												
FY 2020 Plans: Develop, test, and integrate SOF-peculiar emerging technology mission kits, mission payloads, weapons and modifications on MQ-9 UAVs, GCSs, and training systems.												
FY 2021 Plans: Develops, tests, and integrates SOF-peculiar emerging technology mission kits, mission payloads, weapons and modifications on MQ-9 UAVs, GCSs, and training systems.												
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.568 million due to continued test and integration of SOF-peculiar emerging technology mission kits, mission payloads, weapons and modifications on MQ-9 UAVs, GCSs, and training systems.												
Accomplishments/Planned Programs Subtotals									17.745	20.697	21.265	

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)				Project (Number/Name) S851 / MQ-9 Unmanned Aerial Vehicle (UAV)		

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021	FY 2021	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Cost To	Total Cost
			Base	OCO	Total					Complete	
• PROC/1108MQ9: MQ-9 Unmanned Aerial Vehicle	24.621	7.238	6.746	-	6.746	8.442	13.571	14.325	14.682	Continuing	Continuing

Remarks

D. Acquisition Strategy

MQ-9 UAV implements an agile acquisition approach for the MQ-9 aircraft, GCS and Electro-Optical/Infrared (EO/IR) turret sensor Operational Flight Program (OFP) software development. The MQ-9 UAV provides rapid prototyping activities and technology maturation events in order to increase first pass lethality. Contract types include a mix of cost type and fixed priced. Proprietary issues with the aircraft, GCS and sensor software as well as aircraft modification may require sole source contracting to the original equipment manufacturer. MQ-9 UAV leverages service common Contractor Logistics Support (CLS) contracts for aircraft and ancillary equipment sustainment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)				Project (Number/Name) S851 / MQ-9 Unmanned Aerial Vehicle (UAV)					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 UAVs, Ground Control Stations, and Training Systems	SS/ Various	General Atomics Aeronautical Services : San Diego, CA	64.318	14.040	Oct 2018	16.538	Apr 2020	16.992	Feb 2021	-		16.992	Continuing	Continuing	-
MQ-9 UAVs, Ground Control Stations, and Training Systems	SS/ Various	Raytheon : McKinney, TX	9.945	1.292	Oct 2018	1.456	Apr 2020	1.496	Feb 2021	-		1.496	Continuing	Continuing	-
Prior Years Completed Projects	Various	Various : Various	15.900	-		-		-		-		-	0.000	15.900	-
Subtotal			90.163	15.332		17.994		18.488		-		18.488	Continuing	Continuing	N/A
Remarks															
IDIQ awards every two years for MQ-9 UAVs, Ground Control Stations, and Training Systems															
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 UAVs, Ground Control Stations, and Training Systems	SS/ Various	General Atomics Aeronautical Services : San Diego, CA	18.096	2.413	Jun 2019	2.703	Apr 2020	2.777	Feb 2021	-		2.777	Continuing	Continuing	-
Prior Years Completed Projects	Various	Various : Various	5.300	-		-		-		-		-	0.000	5.300	-
Subtotal			23.396	2.413		2.703		2.777		-		2.777	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			113.559	17.745		20.697		21.265		-		21.265	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

Appropriation/Budget Activity

0400 / 7

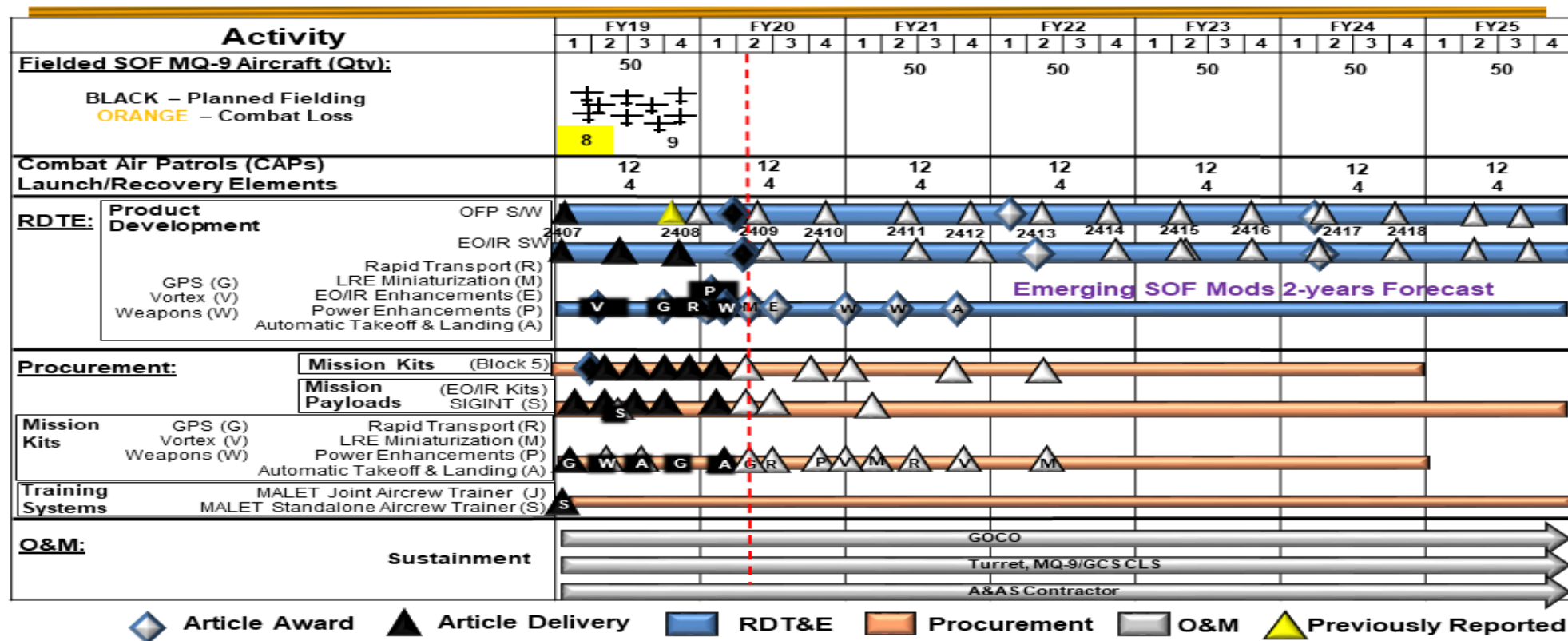
R-1 Program Element (Number/Name)

PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)

Project (Number/Name)

S851 / MQ-9 Unmanned Aerial Vehicle (UAV)

MALET MQ-9 Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1105219BB / MQ-9 Unmanned Aerial Vehicle (UAV)	Project (Number/Name) S851 / MQ-9 Unmanned Aerial Vehicle (UAV)	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>MQ-9 UAVs, Ground Control Stations (GCSs), and Training Systems Product Development</i>				
Operational Flight Program Software (SW)	1	2019	4	2025
Electro-optical/Infrared (EO/IR) Software (SW)	1	2019	4	2025
Weapons (W)	1	2020	2	2022
Global Positioning System (G)	3	2019	4	2020
Automated Takeoff and Landing (A)	4	2021	4	2022
Vortex Integration (V)	2	2019	3	2020
Long Range Endurance Miniaturization (M)	2	2020	2	2021
Power Enhancements (P)	3	2019	3	2020
EO/IR Enhancements (E)	3	2020	2	2021
Rapid Transport (R)	4	2019	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160279BB <i>I Small Business Innovation Research/Small Bus Tech Transfer</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	244.272	18.445	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
S050: <i>Small Business Innovation Research</i>	234.094	16.171	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
S051: <i>Small Business Technology Transfer</i>	10.178	2.274	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element consists of a highly competitive three-phase award system that provides qualified small businesses with the opportunity to propose high quality innovative ideas that meet specific research and development needs of USSOCOM. Small Business Innovation Research (SBIR) is a result of the Small Business Development Act of 1992. It was enacted by Congress in Public Law 97-219, reenacted by Public Law 99-443, and reauthorized by the SBIR Program Reauthorization Act of 2012. Starting in FY 1994, the SBIR program was refocused toward dual use and defense reinvestment efforts. Phase I projects evaluate the scientific merit and feasibility of an idea. Phase II projects expand the results of, and further pursue, the developments of Phase I. Phase III commercializes the results of Phase II and requires the use of private or non-SBIR federal funding. USSOCOM participates annually in the DOD Request for Proposal process. USSOCOM then awards its proposed SBIR projects. FY 2014 was the first year USSOCOM participated in the Small Business Technology Transfer (STTR) program. The STTR goal is similar to the SBIR program, but the STTR program additionally seeks to expand public/private sector partnerships between small business and nonprofit U.S. research institutions.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	18.445	0.000	0.000	-	0.000
Total Adjustments	18.445	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	18.445	-			

Change Summary Explanation

Funding:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	PE 1160279BB / Small Business Innovation Research/Small Bus Tech Transfer	
FY 2019: Net increase of \$18.445 million is due to reprogramming from various program elements for the congressionally mandated SBIR (\$16.171 million) and STTR (\$2.274 million) programs.		
FY 2020: None.		
FY 2021: None.		
Schedule: None.		
Technical: None.		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160279BB / Small Business Innovation Research/Small Bus Tech Transfer				Project (Number/Name) S050 / Small Business Innovation Research			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S050: Small Business Innovation Research	234.094	16.171	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project consists of a highly competitive three-phase award system that provides qualified small businesses with the opportunity to propose high quality innovative ideas that meet specific research and development needs of USSOCOM. Small Business Innovation Research (SBIR) is a result of the Small Business Development Act of 1992. It was enacted by Congress in Public Law 97-219, reenacted by Public Law 99-443, and reauthorized by the SBIR Program Reauthorization Act of 2012. Starting in FY 1994, the SBIR program was refocused toward dual use and defense reinvestment efforts. Phase I projects evaluate the scientific technical merit and feasibility of an idea. Phase II projects expand the results of, and further pursue, the developments of Phase I. Phase III commercializes the results of Phase II and requires the use of private or non-SBIR federal funding. USSOCOM participates annually in the DOD Request for Proposal process. USSOCOM then awards its proposed SBIR projects.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Small Business Innovation Research (SBIR)	16.171	-	-
Accomplishments/Planned Programs Subtotals	16.171	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

SBIR is a three-phase program that provides early-stage Research and Development (R&D) to small companies. Eligible projects must fulfill an R&D need identified by DOD and have the potential to be developed into a product or service for commercial or defense markets. SBIR is designed to stimulate technological innovation, increase private sector commercialization of federal R&D, increase small business participation in federally funded R&D, and foster participation by minority and disadvantaged firms in technological innovation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160279BB / <i>Small Business Innovation Research/Small Bus Tech Transfer</i>	Project (Number/Name) S050 / <i>Small Business Innovation Research</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract
Phase I <\$150K	C/Various	Various : Various	19.651	9.681	Sep 2019	-		-		-		-		Continuing	Continuing	-
Phase II >\$750K	C/Various	Various : Various	15.932	6.490	Aug 2019	-		-		-		-		Continuing	Continuing	-
Prior Year Funding	C/Various	Various : Various	198.511	-		-		-		-		-		0.000	198.511	-
Subtotal			234.094	16.171		-		-		-		-		Continuing	Continuing	N/A

Remarks

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract					
Project Cost Totals			234.094	16.171	0.000	-	-	-	Continuing	Continuing	N/A					

Remarks

Due to multiple awards, the dates listed above reflect the last Phase I and II awarded.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160279BB / <i>Small Business Innovation Research/Small Bus Tech Transfer</i>	Project (Number/Name) S050 / <i>Small Business Innovation Research</i>	

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>Small Business Innovative Research</i>																												
Phase I Efforts																												
Phase II Efforts																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160279BB / <i>Small Business Innovation Research/Small Bus Tech Transfer</i>	Project (Number/Name) S050 / <i>Small Business Innovation Research</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Small Business Innovative Research</i>				
Phase I Efforts	1	2019	3	2019
Phase II Efforts	2	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160279BB / Small Business Innovation Research/Small Bus Tech Transfer				Project (Number/Name) S051 / Small Business Technology Transfer			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S051: Small Business Technology Transfer	10.178	2.274	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Small Business Technology Transfer (STTR) goal is to expand public/private sector partnerships between small business and nonprofit United States (U.S.) research institutions.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Small Business Technology Transfer (STTR)	2.274	-	-
Accomplishments/Planned Programs Subtotals	2.274	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

STTR provides early-stage Research and Development funding directly to small companies working cooperatively with researchers at universities and other research institutions. STTR is also a three-phased program designed to stimulate technological innovation, increase private sector commercialization of federal R&D, increase small business participation in federally funded R&D, and foster participation by minority and disadvantaged firms in technological innovation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160279BB / Small Business Innovation Research/Small Bus Tech Transfer				Project (Number/Name) S051 / Small Business Technology Transfer					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
STTR Phase I <\$150K	C/FFP	Various Vendors : Various Locations	3.499	1.251	May 2019	-		-		-		-	Continuing	Continuing	-
STTR Phase II >\$750K	C/Various	Various Vendors : Various Locations	1.556	1.023	May 2019	-		-		-		-	Continuing	Continuing	-
Prior Year Funding	C/Various	Various : Various	5.123	-		-		-		-		-	0.000	5.123	-
Subtotal			10.178	2.274		-		-		-		-	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			10.178	2.274		0.000		-		-		-	Continuing	Continuing	N/A
Remarks															
Due to multiple awards, the dates listed above reflect the last Phase I and II awarded.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command										Date: February 2020			
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160279BB / <i>Small Business Innovation Research/Small Bus Tech Transfer</i>					Project (Number/Name) S051 / <i>Small Business Technology Transfer</i>			

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>Small Business Technology Transfer</i>																												
STTR Phase I Efforts																												
STTR Phase II Efforts																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160279BB / <i>Small Business Innovation Research/Small Bus Tech Transfer</i>	Project (Number/Name) S051 / <i>Small Business Technology Transfer</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Small Business Technology Transfer</i>				
STTR Phase I Efforts	1	2019	3	2020
STTR Phase II Efforts	2	2019	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	1,328.111	168.026	267.695	230.812	-	230.812	144.939	122.572	132.585	168.726	Continuing	Continuing
SF100: <i>Aviation Systems Advanced Development</i>	979.207	98.093	153.860	102.431	-	102.431	37.556	9.365	17.237	51.122	Continuing	Continuing
SF200: <i>CV-22</i>	15.936	27.344	28.081	16.773	-	16.773	9.634	17.942	18.360	18.727	Continuing	Continuing
SF300: <i>Armed Overwatch/ Targeting</i>	-	0.000	0.000	5.000	-	5.000	0.000	0.000	0.000	0.000	Continuing	Continuing
S750: <i>Mission Training and Preparation Systems</i>	34.573	7.251	8.595	9.630	-	9.630	9.548	9.747	9.972	10.172	Continuing	Continuing
S875: <i>AC/MC-130J</i>	47.277	16.480	29.391	55.083	-	55.083	53.742	54.797	56.069	57.182	Continuing	Continuing
D615: <i>Rotary Wing Aviation</i>	251.118	18.858	47.768	41.895	-	41.895	34.459	30.721	30.947	31.523	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 212

A. Mission Description and Budget Item Justification

SF100 Aviation Systems Advanced Development:

This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation and training requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: SOF common avionics; SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, best known as Silent Knight Radar (SKR) or AN/APQ-187; Defensive Countermeasures; Electronic Warfare (EW) - Radio Frequency Countermeasures (RFCM); Precision Strike Package (PSP); PSP High Energy Laser; AC-130H/W/U and MC-130E/H/P Recapitalization, and other SOF airborne platforms; digital terrain elevation data and electronic order of battle; digital maps; Tactical Mission Networking (TMN), formerly known as Airborne Mission Networking (AbMN); near real-time Intelligence, Surveillance and Reconnaissance (ISR); data fusion; threat detection and avoidance; navigation, target detection, and identification technologies; weapons integration; digital broadcast capabilities; aerial refueling; survivability; mission systems automation and ISR payload technological improvements with size, weight, power and integration onto all SOF unmanned aircraft system (UAS) ISR platforms.

SF200 CV-22 Development/Test and Evaluation:

The CV-22 is a SOF variant of the V-22 vertical medium lift, multi-mission aircraft. The CV-22 project provides long range, high speed, infiltration (infill), exfiltration (exfill), and resupply to SOF teams in hostile, denied, and politically sensitive areas. This is a capability not currently provided by other existing aircraft. The funding in this project supports integration, design, development, rapid prototyping, and test to provide improved capabilities to include, but not limited to, more robust performance in situational awareness, ISR, weapons, avionics, SOF communications, defensive/survivability systems, maneuverability, mission deployment and improved reliability and maintainability of the CV platform.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>
<p>CV-22 SOF Common TF/TA SKR provides long-range, night/adverse weather, clandestine penetration of medium-to-high threat areas to infill, exfill, and resupply SOF forces. Provides more sustainable/capable replacement to obsolescing and technology limited TF/TA AN/APQ-174/186 Multi-Mode Radar (MMR). The Full-azimuth Defensive Weapon System (FDWS), in combination with the ramp-mounted gun, provides a ~360 degree field of fire to suppress/eliminate enemy targets. The FDWS integrates the fielded GAU-17 belly gun system currently employed on the United States Marine Corps (USMC) MV-22 aircraft with the SOF peculiar Color Helmet Mounted Display (CHMD) and cockpit firing controls for pilot operation.</p> <p>SF300: Armed Overwatch: Armed Overwatch provides Special Operations Forces (SOF) deployable and sustainable aircraft systems fulfilling Close Air Support, Precision Strike, and SOF Intelligence, Surveillance & Reconnaissance (ISR) requirements in austere and permissive environments for the Countering-Violent Extremist Organizations mission. Armed Overwatch missions include: Armed ISR, Strike Coordination & Reconnaissance, and Airborne Forward Air Control. The funding in this project supports development, integration, prototype demonstrations, testing of SOF-unique capabilities and Air Worthiness Release efforts.</p> <p>S750 Mission Training and Preparation Systems: The Special Operations Mission Planning and Execution (SOMPE) project funds the definition, design, development, rapid prototyping, integration, and testing of SOMPE systems to support mission planning, rehearsal, and execution requirements to meet SOF-unique mission requirements and correct deficiencies in current mission planning, rehearsal, and execution capabilities. The Mission Training and Preparation Systems project also includes program management, systems engineering, configuration management, architecture development, risk reduction, and trade study initiatives, as well as initiatives to assure interoperability and commonality between diverse mission planning, rehearsal, and execution systems.</p> <p>S875 AC/MC-130J: The AC/MC-130J project funds core SOF-unique modifications to replace aging/retired AC-130H Spectre, AC-130W Stinger II, AC-130U Spooky, MC-130E Combat Talon I, MC-130P Combat Shadow, MC-130H Combat Talon II aircraft. The 8 AC-130H Spectre, 12 AC-130W Stinger II and 17 AC-130U Spooky airframes will be replaced with MC-130J aircraft modified with the PSP to achieve the AC-130J configuration. The AC-130J aircraft will provide close air support, air interdiction, and armed reconnaissance capability. The 14 MC-130E Combat Talon I, 23 MC-130P Combat Shadow, and 20 MC-130H Combat Talon II airframes will be replaced by MC-130J Commando II aircraft with SOF mission modifications. The MC-130J Commando II aircraft provide clandestine single or multi-ship low-level aerial refueling for special operations helicopters and CV-22 aircraft; and conducts airdrops of leaflets, small special operations teams, resupply bundles, and combat rubber raiding craft. The Air Force procures and fields the basic aircraft, common support equipment, and trainers for USSOCOM. Incremental upgrade and agile software delivery approaches will be used to rapidly prototype, integrate and mature SOF capabilities onto the aircraft. SOF capabilities include, but are not limited to: Airborne Mission Networking (AbMN), data fusion, threat detection and avoidance, integrated terrain following/terrain avoidance, electronic warfare, and embedded training. Integrating and automating SOF mission systems that deliver these capabilities is critical to fielding SOF-capable AC/MC-130J aircraft to recapitalize Air Force Special Operations Command's (AFSOC) legacy C-130 fleet.</p> <p>D615 Rotary Wing Aviation: This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique rotary wing aviation and training requirements. This project includes modifications to Aircraft Survivability Equipment (ASE), avionics, and weapons systems</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>
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to counter rapidly emerging threats, address cyber security, improve lethality and enhance aircraft self-protection in contested environments. Rotary wing aircraft supported by this project include: MH-60M, MH-47G, and A/MH-6M. These aircraft provide aviation support to SOF in worldwide contingency operations and low-intensity conflicts. They must be capable of rapid deployment, undetected penetration of hostile areas, and operations at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF in the multi-domain operations (MDO) environments and against near peer threats. The anti-access/area denial (A2/AD) threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters.

These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	175.862	245.795	206.685	-	206.685
Current President's Budget	168.026	267.695	230.812	-	230.812
Total Adjustments	-7.836	21.900	24.127	-	24.127
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	16.000			
• Congressional Directed Transfers	-	8.400			
• Reprogrammings	-1.652	-			
• SBIR/STTR Transfer	-6.184	-			
• Other	-	-	24.127	-	24.127

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: SF100: *Aviation Systems Advanced Development*

Congressional Add: *Vertical Takeoff and Landing (VTOL) Unmanned Aircraft System (UAS) Research*

Congressional Add: *Classified Project*

Congressional Add Subtotals for Project: SF100

Project: D615: *Rotary Wing Aviation*

Congressional Add: *Future Vertical Lift (FVL)*

Congressional Add Subtotals for Project: D615

Congressional Add Totals for all Projects

FY 2019	FY 2020
3.000	-
-	8.000
3.000	8.000
-	8.000
-	8.000
3.000	16.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	
Change Summary Explanation Funding: FY 2019: Net decrease of \$7.836 million is due to transfer of funds to Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) reductions (-\$6.184 million) and funding made available to support emergent Command requirements in the year of execution (-\$1.652 million). FY 2020: Net increase of \$13.900 million includes: \$8.000 million Congressional Add to Future Vertical Lift (FVL) enables engineering design work on SOF-peculiar requirements for two prototype Future Attack Reconnaissance Aircraft (FARA) air vehicles; while simultaneously executing prototype and engineering on other lines of effort; Future Long Range Assault Aircraft (FLRAA), Air Launched Effects (ALE) and Modular Open System Architecture (MOSA). Congressional add of net \$8.400 million is for Electronic Warfare Radio Frequency Countermeasures (EW-RFCM) to support product development, support, test and evaluation. Congressional directed reduction of \$2.500 million from Integrated Tactical Mission Systems (ITMS) due to unjustified growth. FY 2021: Net increase of \$24.127 million is due to an increase for the Tactical (Airborne) Mission Networking (TMN) to explore capabilities to enable the rapid incorporation of advanced waveforms and the incorporation of advanced communications and networking hardware onto the ARSOA Aircraft (\$3.000 million); an increase in Future Vertical Lift (FVL) to deploy and integrate SOF-unique capabilities in the FVL Family of Systems (FoS) (\$2.000 million); the Improved Rotary Wing Electro-Optical Sensor (IRES) program, formerly known as Next Generation Forward Looking Infrared (NGFLR), to commence software changes to integrate onto AH-6, MH-6, and MH-60M platforms, and complete combined development and operations testing (\$3.500 million); an increase for the Aviation Engineering Analysis (AEA) to improve SOF aviation mission survivability (\$3.947 million); an increase for the CV-22 SOF Common TF/TA Silent Knight Radar (SKR) to continue integration and testing (\$6.680 million); and an increase of funding provided for the Armed Overwatch/Targeting program as a departmental directed requirement (\$5.000 million) Technical: None.		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
SF100: Aviation Systems Advanced Development	979.207	98.093	153.860	102.431	-	102.431	37.556	9.365	17.237	51.122	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation and training requirements. Timely application of SOF Common technology is critical and necessary to meet requirements in such areas as: SOF common avionics; SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, best known as Silent Knight Radar (SKR) or AN/APQ-187; Defensive Countermeasures; Electronic Warfare (EW) - Radio Frequency Countermeasures (RFCM); Precision Strike Package (PSP); PSP High Energy Laser; AC-130H/W/U and MC-130E/H/P Recapitalization, and other SOF airborne platforms; digital terrain elevation data and electronic order of battle; digital maps; Tactical Mission Networking (TMN), formerly known as Airborne Mission Networking (AbMN); near real-time Intelligence, Surveillance and Reconnaissance (ISR); data fusion; threat detection and avoidance; navigation, target detection, and identification technologies; weapons integration; digital broadcast capabilities; aerial refueling; survivability; mission systems automation and ISR payload technological improvements with size, weight, power and integration onto all SOF Unmanned Aircraft System (UAS) ISR platforms.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: EW – RFCM	17.094	53.139	52.934
Description: EW-RFCM supports development, integration, and test activities to provide Electronic Warfare (EW) capability against Radio Frequency (RF) threats for SOF-unique AC/MC-130J aircraft. The RFCM system is part of the Defensive Countermeasures (DCM) suite that provides situational awareness and threat response processing required for SOF missions.			
FY 2020 Plans: Reintroduce competition to address struggling vendor performance. Begin hardware in the Loop system demonstration activities for up to four vendors at Government labs to support a best value decision and program restart in 3QFY20. Remaining funds support incremental funding of the follow-on development contract for remaining aircraft integration, hardware and software qualification, software development, and developmental and operational test.			
FY 2021 Plans: Begins first test kit installations of new RFCM system for AC-130J and MC-130J aircraft, interoperability design with MC-130J SOF Common TF/TA Radar, and begins system developmental test. Continues aircraft integration, system qualification, and software deficiency resolution.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) SF100 / Aviation Systems Advanced Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Decrease of \$0.205 million due to reduced Government test facility costs going from three vendor demonstrations in FY20 to one vendor developmental test in FY21.				
<p>Title: PSP for SOF</p> <p>Description: PSP for SOF supports systems engineering, analysis, development, and enhancement of the baseline PSP and integration, installation, and test on host MC-130J aircraft provided by the U.S. Air Force for the AC-130H, AC-130W and AC-130U recapitalization, as well as current SOF AC-130Js, AC-130Ws, and other SOF platforms. Missions for the AC-130 aircraft include, but are not limited to, Close Air Support, Air Interdiction, and Armed Reconnaissance. PSP is modular, scalable, and platform neutral.</p> <p>FY 2020 Plans: Continue development, integration, test, and system improvement of the PSP, to include defensive systems, EO/IR sensors, and adverse weather and special mission processor capabilities on SOF C-130s and other SOF aircraft. Complete development of the infrared suppression system and other defensive systems.</p> <p>FY 2021 Plans: Continues development, integration, test, and system improvement of the PSP, to include defensive systems, EO/IR sensors, and adverse weather and special mission processor capabilities on SOF C-130s and other SOF aircraft.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$23.899 million is due to the expected completion of developing the infrared suppression system and other defensive systems.</p>		14.697	28.528	4.629
<p>Title: PSP High Energy Laser (HEL)</p> <p>Description: The HEL effort leverages a rapid prototyping approach to demonstrate integration of a laser weapon system onto an AC-130J aircraft. Utilizing a best of breed approach, it integrates laser, beam control, power and thermal subsystems via a government lead system integrator. This provides additional flexibility for rapid prototyping and future modifications.</p> <p>FY 2020 Plans: Take receipt of subsystems ordered and begin assembly of subsystems into weapon systems. Begin integration and ground testing of assembled subsystems. Complete purchase of developmental long lead items.</p> <p>FY 2021 Plans: Continues assembly of subsystems into weapon systems. Continues integration and ground testing of assembled subsystems. Begins flight testing of subsystems.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>		26.022	27.227	24.195

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) SF100 / Aviation Systems Advanced Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Decrease of \$3.032 million is due to completion of purchase of developmental long lead items.				
<p>Title: C-130 SOF Common TF/TA SKR</p> <p>Description: C-130 SOF Common TF/TA (Silent Knight) radar supports integration and test of a TF/TA radar and on-board processor to provide a multi-mode terrain following capability on MC-130J aircraft. Crew systems integration efforts include modifications to aircraft controls and displays to automate TF/TA flight management and reduce pilot, copilot and Combat Systems Officer workload during missions previously performed by five aircrew members on legacy MC-130 tankers and penetrators.</p> <p>FY 2020 Plans: Continue MC-130J TF/TA developmental flight test on aircraft modified with SOF Common TF/TA radar. Begin development and interoperability testing on MC-130J TF/TA radar and airborne mission networking systems. Complete MC-130J SOF Common TF/TA SKR development and integration testing.</p> <p>FY 2021 Plans: Completes MC-130J TF/TA developmental flight test and integration testing on aircraft modified with SOF Common TF/TA radar. Continues development and interoperability testing on MC-130J TF/TA systems, electronic warfare systems, and airborne mission networking systems. Trains AFSOC aircrews on an MC-130J modified with a SOF Common TF/TA SKR for operational testing. Resolves deficiencies reported during developmental or operational flight testing.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$20.068 million is due to the completion of MC-130J SOF Common TF/TA SKR development and integration testing.</p>		32.477	32.524	12.456
<p>Title: MH-47/MH-60 SOF Common TF/TA SKR</p> <p>Description: MH-47/MH-60 SOF Common TF/TA (Silent Knight) radar supports continuing capability enhancements, testing, and qualification of the TF/TA Low Probability of Intercept and Low Probability of Detection (LPI/LPD) radar to defeat advanced passive detection threats while maintaining safe Terrain Following (TF) capabilities.</p> <p>FY 2020 Plans: Continues software spiral efforts to include design, development, integration, and testing of SOF Common TF/TA SKR to reduce Terrain Following signature, improve Aircraft Survivability Equipment (ASE) interoperability support, sensor fusion initiatives, and increase reliability.</p> <p>FY 2021 Plans:</p>		3.089	2.476	2.362

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) SF100 / <i>Aviation Systems Advanced Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Continues software spiral efforts to include design, development, integration, and testing of SOF Common TF/TA SKR to reduce Terrain Following signature, improve ASE interoperability support, sensor fusion initiatives, and increase reliability. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.114 million is due to minor adjustments.				
Title: ISR Payload Description: ISR Payload Sensor Technology supports development, integration, and testing of sensor miniaturization efforts to adapt large unmanned system ISR capabilities on all SOF unmanned ISR platforms. FY 2020 Plans: Continue spiral development to increase the smaller SOF ISR platforms' capabilities through incremental development, integration, and testing. FY 2021 Plans: Continues spiral development to increase the smaller SOF ISR platforms' capabilities through incremental development, integration, and testing. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.058 million is due to minor adjustments.		1.214	1.966	1.908
Title: Aviation Engineering Analysis (AEA) Description: Funding supports engineering analysis activities to address aviation survivability such as signature management, situational awareness, and versatile mission equipment (payloads, communications and weapons) to achieve SOF mission objectives. FY 2021 Plans: Performs engineering analysis to improve SOF aviation mission survivability. Activities include, but are not limited to, signature management (acoustic, infrared, radio frequency), situational awareness with full spectrum threat warning and countermeasures, and versatile mission equipment (payloads, communications and weapons) to improve SOF survivability in less than permissive operating environments. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$3.947 million is due to transfer from SOF Advanced Technology Development (PE 1160402BB).		-	-	3.947
Title: Avionics Modifications (AVNCS) Description: Funding supports software development and integration for the MC/EC-130J GPS Hardening effort.		0.500	-	-

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Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2019	FY 2020	FY 2021
Accomplishments/Planned Programs Subtotals										95.093	145.860	102.431
										FY 2019	FY 2020	
Congressional Add: Vertical Takeoff and Landing (VTOL) Unmanned Aircraft System (UAS) Research										3.000	-	
FY 2019 Accomplishments: Funds to be reprogrammed to the Army.												
Congressional Add: Classified Project										-	8.000	
FY 2020 Plans: Details provided under Separate Cover												
Congressional Adds Subtotals										3.000	8.000	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• PROC/5000C13000: C-130 Modifications	72.942	15.582	20.414	-	20.414	14.985	15.545	18.217	18.595	Continuing	Continuing	
• PROC/2012C130J: AC/MC-130J	163.181	143.232	163.914	-	163.914	213.649	296.535	322.669	333.789	Continuing	Continuing	
• PROC/1202PSP: Precision Strike Package	229.674	232.930	243.111	-	243.111	167.714	141.180	134.636	137.334	Continuing	Continuing	
• PROC0201RWUPGR: Rotary Wing Upgrades and Sustainment	148.907	172.020	211.041	-	211.041	230.870	247.497	267.854	258.750	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
• EC-130J Upgrades: Operational Flight Program (OFP) Block Cycle is being developed by the Air Force program office using existing development and production contracts.												
• EC-130J Commando SOLO: This program is being transitioned into the Multi Mission Payload - Heavy (MMP-H) program, Warrior Systems, PE 1160431BB. MMP-H uses a traditional acquisition development and procurement strategy with accelerated development that includes increased flight test and multiple combat evaluations.												
• EW – RFCM: Scope current contract with BAE Systems to a B-Kit demonstration, and in parallel, execute three Other Transaction Authority (OTA) demonstrations with new industry partners for a best value decision and follow on award for remaining development effort in 3QFY20.												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) SF100 / <i>Aviation Systems Advanced Development</i>
<ul style="list-style-type: none"> • PSP for SOF: Incremental acquisition strategy to integrate and test the PSP and capability enhancements on donor MC-130J aircraft provided by the U.S. Air Force and other SOF aircraft. Multiple contract awards. • PSP HEL: AC-130 HEL program utilizes Naval Surface Warfare Center (NSWC) Dahlgren Division as the government Lead System Integrator of HEL components. HEL system components are either purchased under Defense Ordinance Technology Consortium OTA or developed and assembled by NSWC Dahlgren. Both of these approaches provide flexibility for rapid prototyping. • C-130 SOF Common TF/TA SKR: Awarded delivery order on Cost Plus Incentive Fee (CPIF) contract to integrate and test the SOF Common TF/TA SKR on MC-130J aircraft and develop modifications to aircraft displays and controls. • MH-47/MH-60 SOF Common TF/TA SKR: Continue software spiral development to improve the reliability and usability of the radar. • ISR Payload Sensor Technology: Effort is being executed via a spiral development, integration and testing acquisition strategy based on leveraging existing sensor technology. The focus will be on reducing the size, weight, power, and cost of state of the art ISR sensors fielded on larger ISR platforms, in order to make them usable by smaller SOF ISR platforms. This development will include the integration of the ISR capability with the platform's Command and Control and Communications systems as appropriate. • Aviation Engineering Analysis: Utilize DoD Information Analysis Center sponsored by the Defense Technical Information Center (DTIC) to analyze aircraft survivability and recommend material solutions for demonstration and potential integration on Fixed Wing aircraft. 		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vertical Takeoff and Landing (VTOL) Unmanned Aircraft System (UAS) Research Congressional Add	C/TBD	TBD : TBD	-	3.000	Jan 2019	-		-		-		-	0.000	3.000	-
Electronic Warfare - Radio Frequency Countermeasures (EW-RFCM)	C/CPIF	BAE Systems, Inc. : Totowa, NJ	140.061	13.494	Nov 2018	-		-		-		-	0.000	153.555	-
EW - RFCM B-Kit Competitive Demonstration	C/FFP	Various : Various	-	-		10.050	Nov 2019	-		-		-	0.000	10.050	-
EW - RFCM Follow-on Development Contract	C/TBD	TBD : TBD	-	-		34.089	May 2020	44.534	Nov 2020	-		44.534	Continuing	Continuing	-
Precision Strike Package (PSP) for SOF - Defensive Systems	C/Various	Various : Various	2.510	6.750	Jan 2019	18.641	Jan 2020	-		-		-	0.000	27.901	-
PSP for SOF - Deficiency Resolution	C/Various	Various : Various	0.600	1.400	Jan 2019	4.789	Mar 2020	-		-		-	0.000	6.789	-
PSP for SOF - Adverse Weather	C/Various	Various : Various	3.240	0.192	Jan 2019	1.000	Mar 2020	4.380	Jan 2021	-		4.380	Continuing	Continuing	-
PSP for SOF - Alternate Position, Navigation & Timing	C/Various	Various : Various	3.708	5.652	Dec 2019	-		-		-		-	0.000	9.360	-
PSP High Energy Laser (HEL) - Risk Reduction	C/CPFF	Naval Surface Warfare Center : Dahlgren, VA	1.300	3.400	Jan 2019	-		-		-		-	0.000	4.700	-
PSP HEL - High Power Laser	C/CPFF	Lockheed Martin Aculite : Bothell, WA	3.750	13.250	Dec 2018	-		2.300	Nov 2020	-		2.300	0.000	19.300	-
PSP HEL - Subsystem Assembly	C/CPFF	Naval Surface Warfare Center : Dahlgren, VA	-	5.658	Mar 2019	10.127	Jan 2020	6.690	Jan 2021	-		6.690	Continuing	Continuing	-
PSP HEL - Battery Development	C/CPFF	General Technical Services : Wall, NJ	-	1.914	Feb 2019	3.600	Jan 2020	-		-		-	0.000	5.514	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PSP HEL - Thermal Development	C/CPFF	Naval Surface Warfare Center : Dahlgren, VA	-	1.800	Jan 2019	6.500	Jan 2020	-		-		-	0.000	8.300	-
PSP HEL - Integration and Ground Testing	C/CPFF	Naval Surface Warfare Center : Dahlgren, VA	-	-		7.000	Jan 2020	12.905	Jan 2021	-		12.905	Continuing	Continuing	-
PSP HEL-Flight Testing/ Demonstration	C/CPFF	Various : Various	-	-		-		2.300	Mar 2021	-		2.300	Continuing	Continuing	-
C-130 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR)	C/CPIF	Lockheed Martin Aero : Marietta, GA	165.926	21.955	Jan 2019	19.407	Jan 2020	5.847	Jan 2021	-		5.847	Continuing	Continuing	-
MH-47/MH-60 SOF Common TF/TA SKR	SS/FP	Raytheon : McKinney, TX	9.553	1.877	Apr 2019	1.733	Apr 2020	1.653	Apr 2021	-		1.653	Continuing	Continuing	-
Intelligence, Surveillance, and Reconnaissance Payload (ISR)	Various	Various : Various	4.328	1.214	Apr 2019	1.966	Nov 2019	1.908	Nov 2020	-		1.908	Continuing	Continuing	-
Aviation Engineering Analysis (AEA) – Aircraft Survivability Analysis	C/CPFF	DSIAC : Belcamp, MD	-	-		-		1.500	Jan 2021	-		1.500	Continuing	Continuing	-
AEA – Alternate Position Navigation and Timing Demo	C/CPFF	SRI : Menlo, CA	-	-		-		2.447	Jan 2021	-		2.447	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	346.629	-		-		-		-		-	0.000	346.629	-
C-130 Avionics Modifications	C/CPFF	Lockheed Martine : SOFSA Lexington, KY	-	0.500	Sep 2019	-		-		-		-	0.000	0.500	-
Classified Project	C/Various	Under Separate Cover : Under Separate Cover	-	-		8.000		-		-		-	Continuing	Continuing	-
Subtotal			681.605	82.056		126.902		86.464		-		86.464	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development					
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-130 SOF Common TF/ TA SKR	C/CPIF	Various : Various	14.230	1.859	Jan 2019	3.887	Dec 2019	1.185	Dec 2020	-		1.185	Continuing	Continuing	-
EW-RFCM	C/Various	Robins AFB : Warner Robins, GA	20.334	3.600	Jan 2019	5.919	Jan 2020	3.400	Jan 2021	-		3.400	Continuing	Continuing	-
PSP for SOF - Other Government Costs	C/Various	Various : Various	2.960	0.703	Sep 2019	4.098	Apr 2020	0.249	Feb 2021	-		0.249	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	28.802	-		-		-		-		-	0.000	28.802	-
Subtotal			66.326	6.162		13.904		4.834		-		4.834	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EW-RFCM	C/Various	Robins AFB : Warner Robins, GA	8.380	-		3.081	Dec 2019	5.000	Dec 2020	-		5.000	Continuing	Continuing	-
C-130 SOF Common TF/ TA SKR	C/CPIF	Various : Various	27.699	8.000	Jan 2019	9.230	Dec 2019	5.424	Dec 2020	-		5.424	Continuing	Continuing	-
MH-47/MH-60 SOF Common TF/TA SKR	SS/FP	Various : Various	124.159	1.212	Jan 2019	0.743	Jan 2020	0.709	Jan 2021	-		0.709	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	29.130	-		-		-		-		-	0.000	29.130	-
Subtotal			189.368	9.212		13.054		11.133		-		11.133	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-130 SOF Common TF/ TA SKR	C/CPIF	Various : Various	10.742	0.663	Jan 2019	-		-		-		-	0.000	11.405	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020		
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF100 / Aviation Systems Advanced Development				

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Funding - Completed Efforts	Various	Various : Various	31.166	-		-		-		-		-	0.000	31.166	-
Subtotal			41.908	0.663		-		-		-		-	0.000	42.571	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	979.207	98.093	153.860	102.431	-	102.431	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

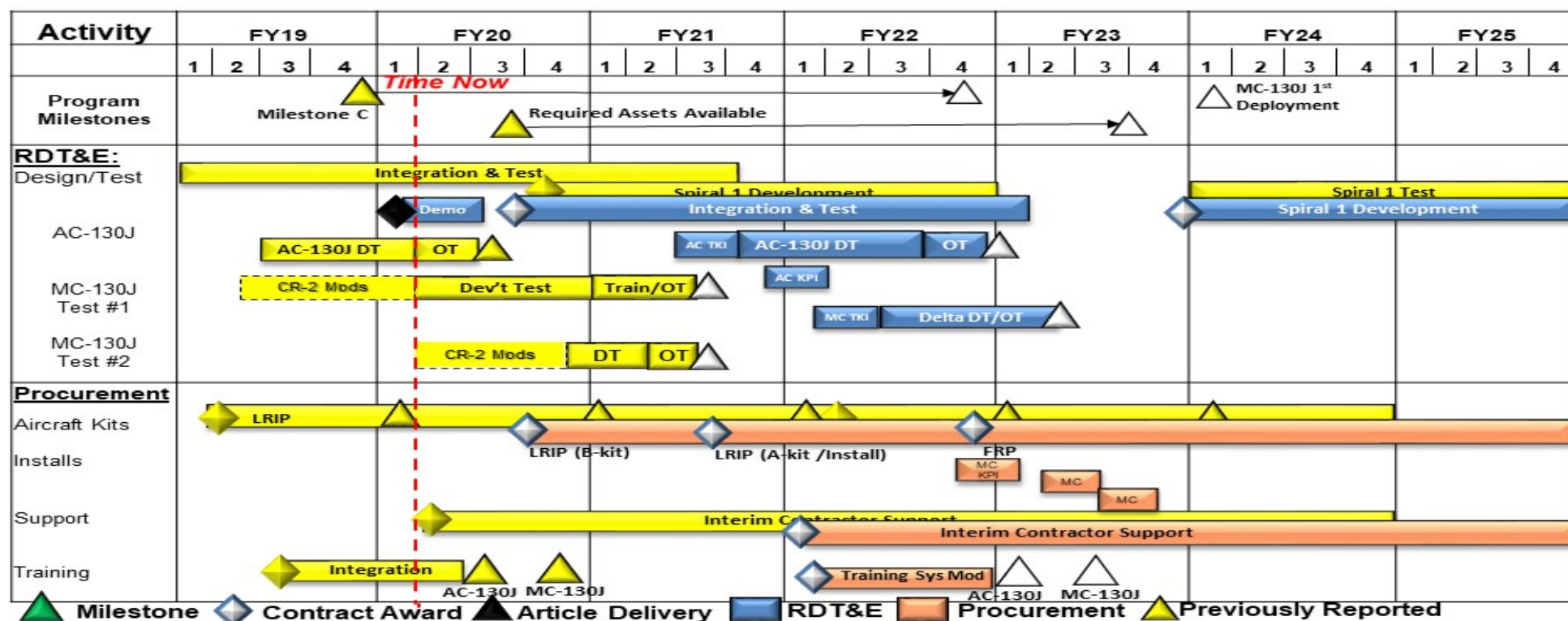
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development

AC/MC-130J RFCM PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

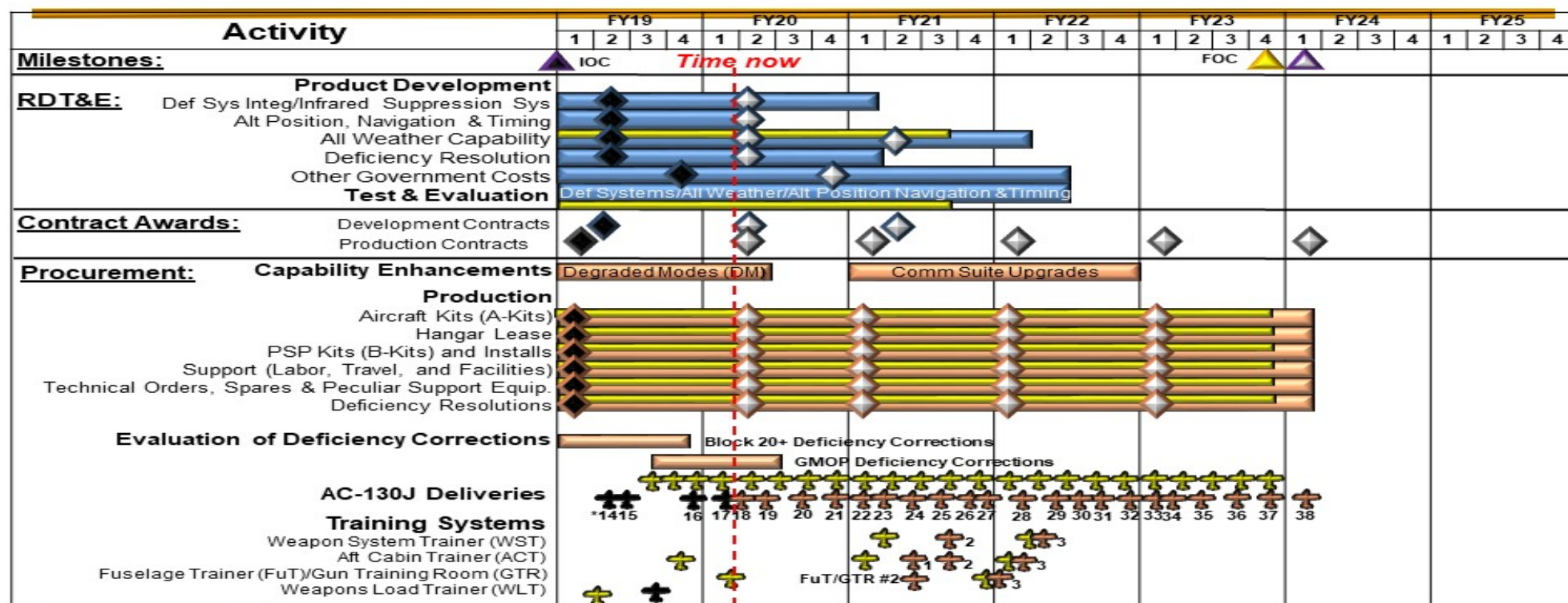
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development

AC-130J/PSP PEO Managed Schedule



Milestones
 Contract Award
 Article Delivery
 RDT&E
 Procurement
 Previously Reported

*A/C14 – first article with GMOP, cheek racks & Combat System Operator station

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

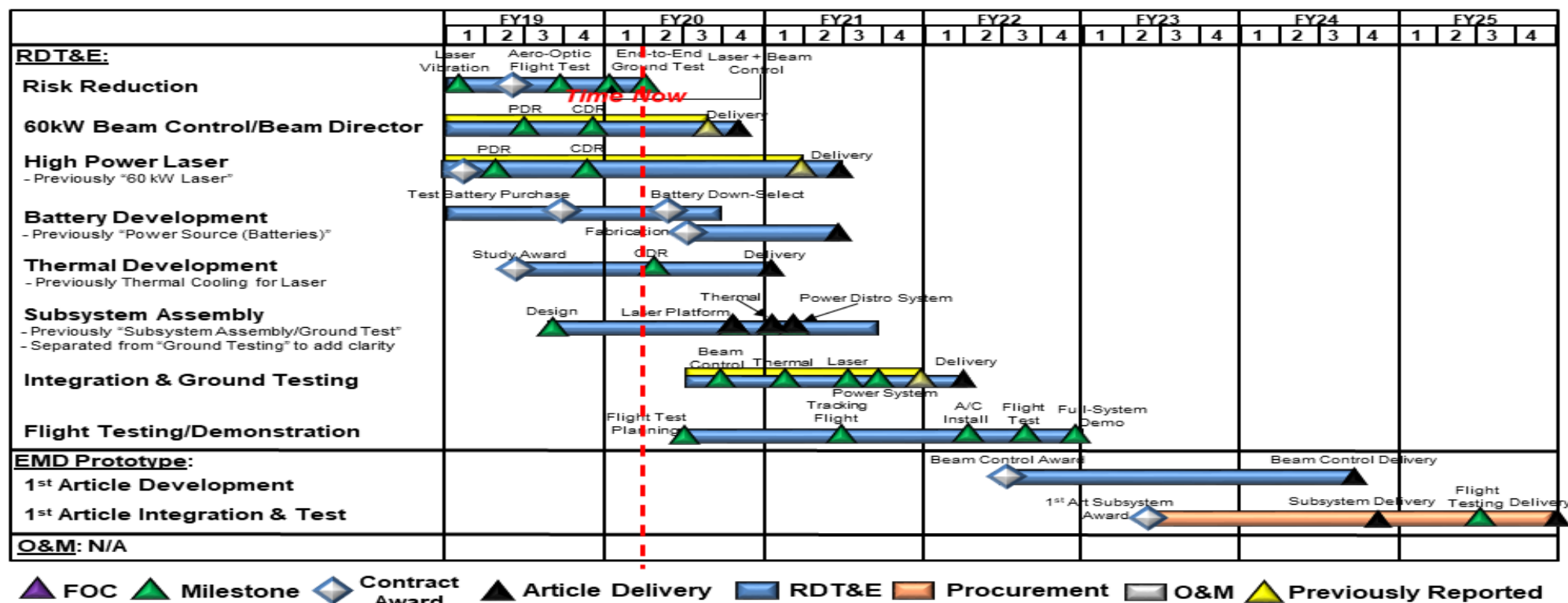
Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development



AC-130J High Energy Laser Schedule PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

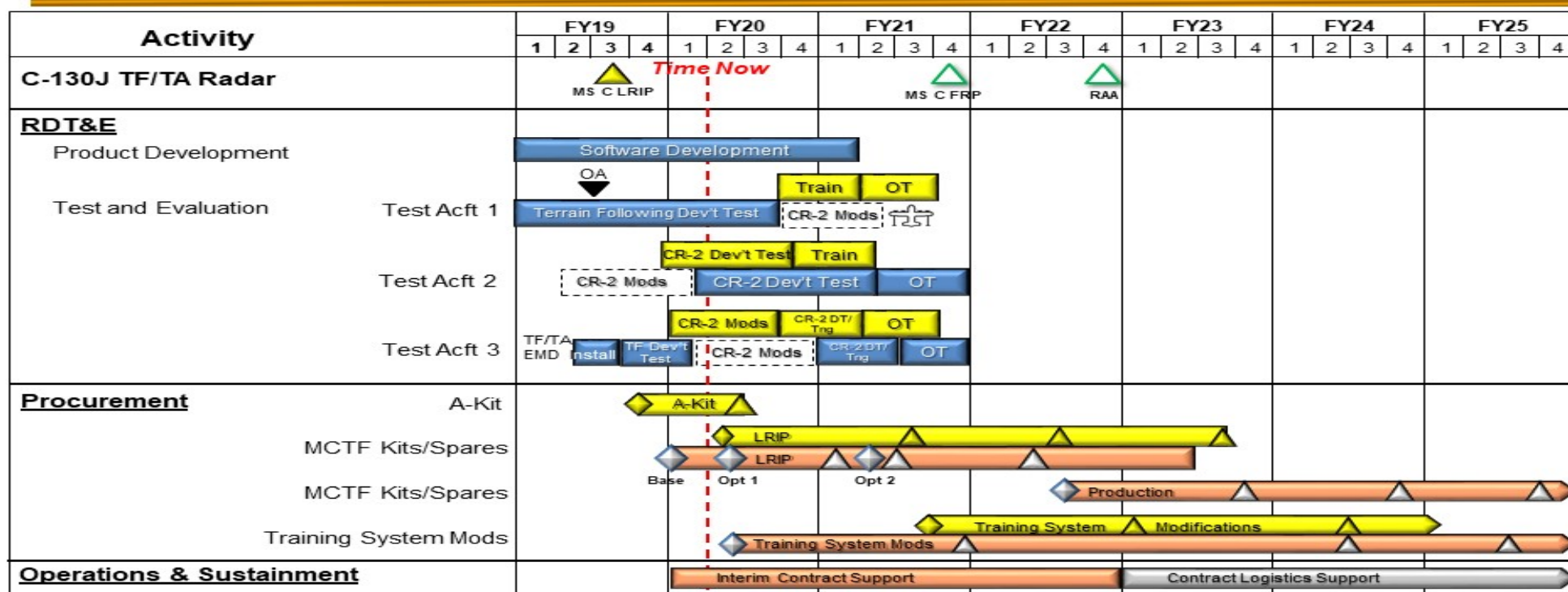
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development

C-130 SOF Common TF/TA Silent Knight Radar (SKR) PEO Managed Schedule



▲ Milestone ◆ Contract Award ▲ Article Delivery ■ RDT&E ■ Procurement ■ O&M ▲ Previously Reported
 [Dashed Box] Aircraft undergoing Capability Release 2 (CR-2) Modifications

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

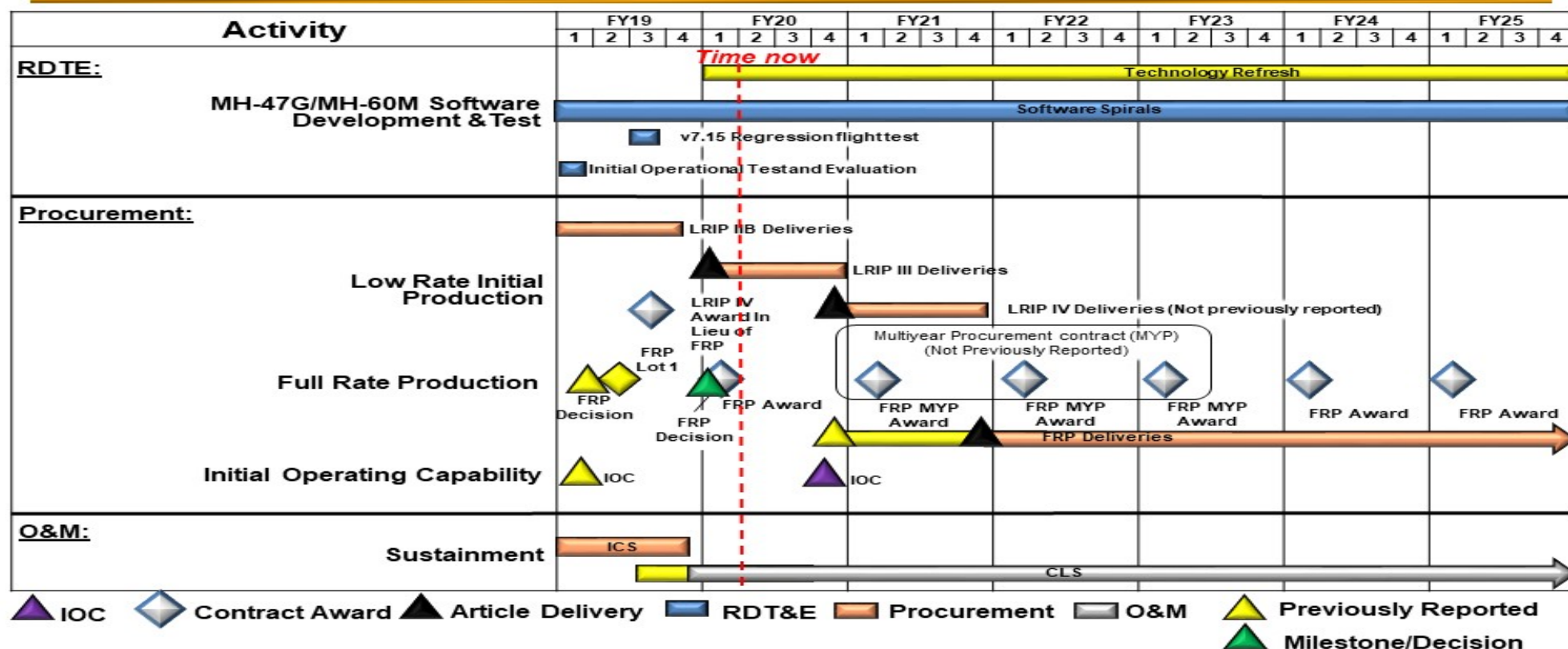
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development

MH-47/MH-60 SOF Common TF/TA (Silent Knight) Radar PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

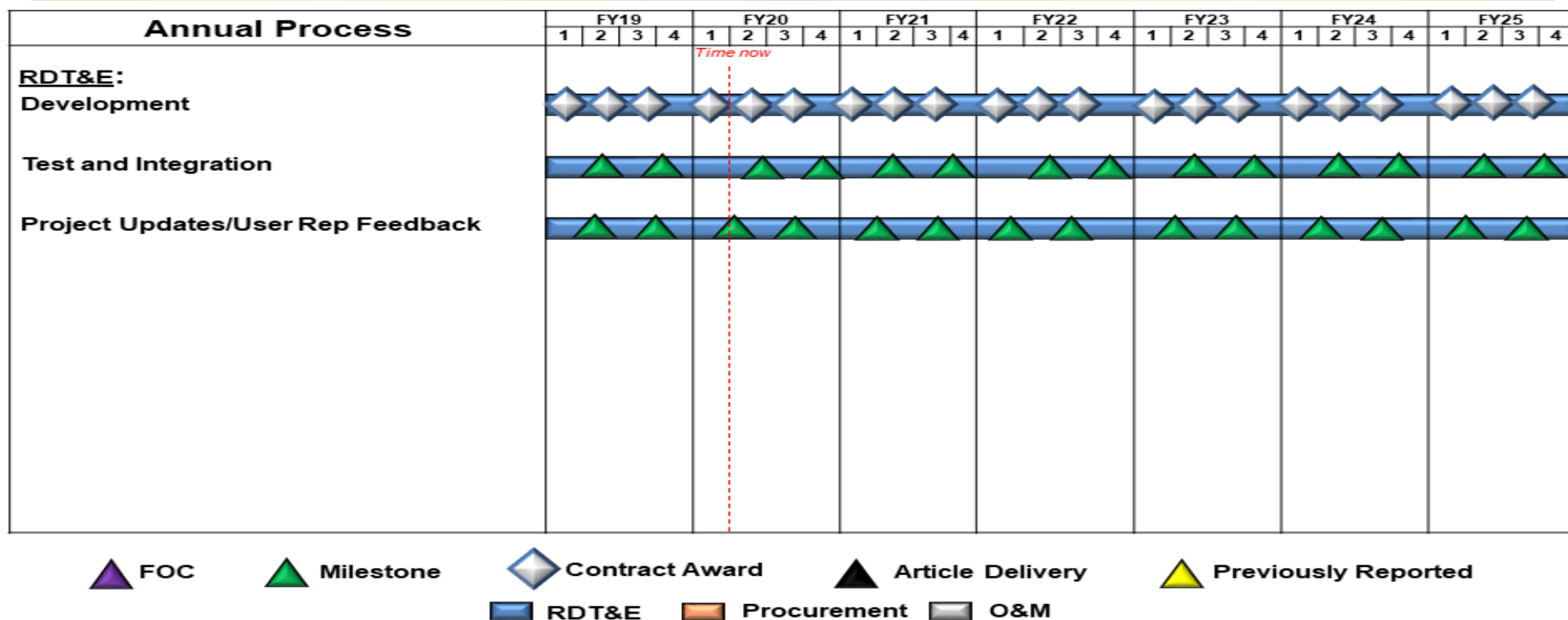
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced Development

Intelligence, Surveillance, and Reconnaissance (ISR) Payload Sub-Project PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

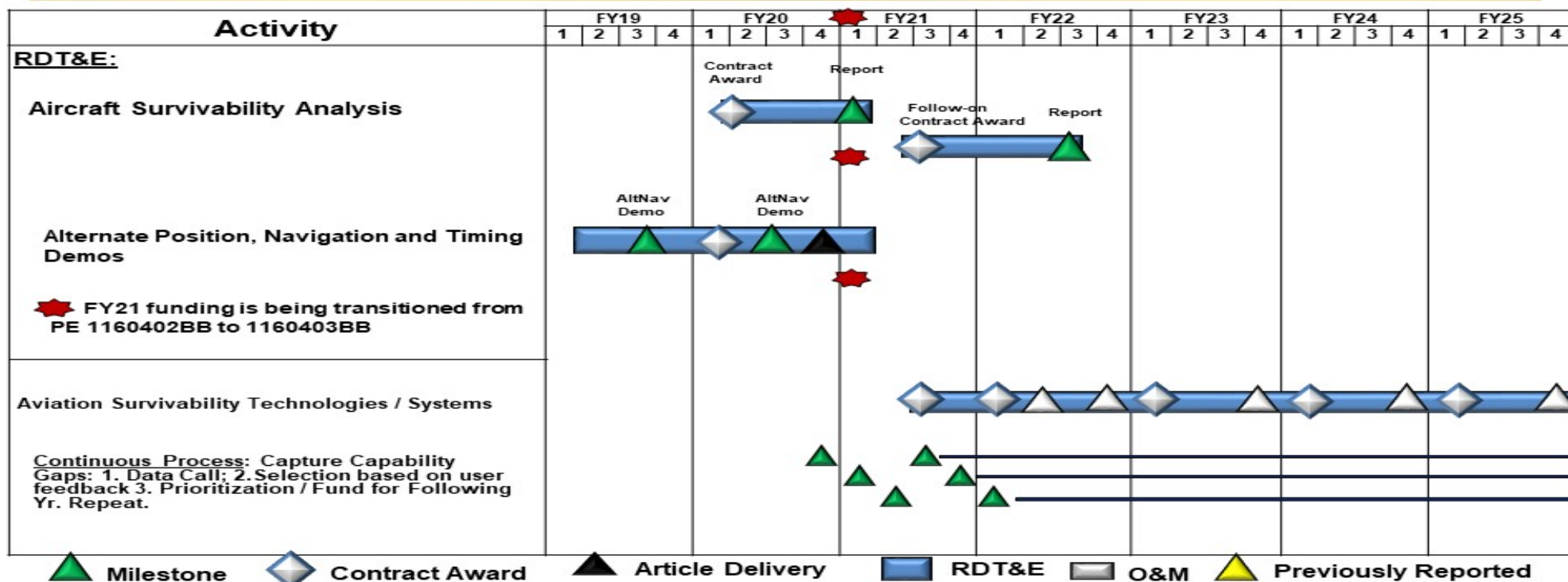
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF100 / Aviation Systems Advanced
Development

Aviation Engineering Analysis (AEA) PEO Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) SF100 / <i>Aviation Systems Advanced Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Electronic Warfare - Radio Frequency Countermeasures (EW-RFCM)</i>				
Product Development, Integration and Test	3	2020	1	2023
Spiral 1 Development	1	2024	4	2025
Development Test and Operational Test (DT/OT) AC-130J	2	2021	4	2022
Development Test and Operational Test #1 (DT/OT) MC-130J	3	2022	2	2023
<i>Precision Strike Package (PSP) for SOF</i>				
Defensive Systems Product Development	1	2019	1	2021
Alternate Position, Navigation and Timing Product Development	1	2019	2	2020
Adverse Weather Product Development	1	2019	1	2022
Deficiency Resolution Product Development	1	2019	1	2021
Other Capability Enhancements Product Development	1	2019	2	2022
Capability Enhancements Test and Evaluation	1	2019	2	2022
<i>PSP High Energy Laser (HEL)</i>				
PSP HEL Risk Reduction	1	2019	2	2020
PSP HEL 60kW Beam Control/Beam Director	1	2019	4	2020
PSP HEL High Power Laser	1	2019	2	2021
PSP HEL Battery Development	1	2019	2	2021
PSP HEL Thermal Development	2	2019	1	2021
PSP HEL Subsystem Assembly	3	2019	3	2021
PSP HEL Integration and Ground Testing	3	2020	1	2022
PSP HEL Flight Testing/Demonstration	2	2020	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) SF100 / Aviation Systems Advanced Development
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>C-130 SOF Common Terrain Following/Terrain Avoidance (TF/TA) Silent Knight Radar (SKR)</i>				
Software Development	1	2019	1	2021
Development/Flight Testing	1	2019	2	2021
Operational Testing	2	2021	4	2021
<i>MH-60/MH-47 SOF Common (TF/TA) SKR</i>				
MH-47G/MH-60M Product Development & Test (Software Spirals)	1	2019	4	2025
Regression Flight Test	3	2019	3	2019
Initial Operation Test and Evaluation	1	2019	1	2019
<i>Intelligence, Surveillance, and Reconnaissance (ISR) Payload</i>				
Development	1	2019	4	2025
Testing and Integration	1	2019	4	2025
Project Update/User Rep Feedback	1	2019	4	2025
<i>Aviation Engineering Analysis (AEA)</i>				
Aircraft Survivability Analysis	1	2020	3	2022
Alternate Position, Navigation, and Timing Demo	1	2019	1	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF200 / CV-22			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
SF200: CV-22	15.936	27.344	28.081	16.773	-	16.773	9.634	17.942	18.360	18.727	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 212												
A. Mission Description and Budget Item Justification												
The CV-22 is a SOF variant of the Joint V-22 vertical medium lift, multi-mission aircraft. The CV-22 project provides long range, high speed, infiltration, exfiltration, and resupply to SOF teams in hostile, denied, and politically sensitive areas. This is a capability not currently provided by other existing aircraft. The funding in this project supports integration, design, development, rapid prototyping, and test to provide improved capabilities to include, but not limited to, more robust performance in situational awareness, intelligence, surveillance, and reconnaissance, weapons, SOF communications, avionics, defensive/survivability systems, maneuverability, mission deployment and improved reliability and maintainability of the CV-22 platform.												
CV-22 SOF Common Terrain Following Terrain Avoidance (TF/TA) Silent Knight Radar (SKR): Provides long-range, night/adverse weather, clandestine penetration of medium-to-high threat areas for infiltration, exfiltration, and resupply of SOF forces. This more sustainable and capable radar replaces the obsolescing APQ-186 terrain following/avoidance radar currently integrated on CV-22 aircraft.												
CV-22 Block 20 Systems: Design, integrate, test, and validate enhancements required to meet SOF-unique mission requirements and correct deficiencies identified in previous testing. This incremental development will provide improved capabilities to include, but not limited to, robust performance in situational awareness, ISR, weapons, SOF communications, avionics, defensive/survivability systems, maneuverability, mission deployment, improved reliability and maintainability of the CV platform. Included within Block 20 is the Full-azimuth Defensive Weapon System (FDWS). FDWS provides the CV-22 with the capability to suppress threats in the forward hemisphere while the aircraft is in the critical phase of landing and takeoff at the mission objective. The FDWS integrates the fielded GAU-17 belly gun system currently employed on the United States Marine Corps MV-22 aircraft with the SOF peculiar Color Helmet Mounted Display (CHMD) and cockpit firing controls for pilot operation.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2019	FY 2020	FY 2021	
Title: CV-22 SOF Common TF/TA SKR									27.344	27.587	14.644	
Description: Provides long-range, night/adverse weather, clandestine penetration of medium-to-high threat areas for infiltration, exfiltration, and resupply of SOF forces. This more sustainable and capable radar replaces the obsolescing AN/APQ-174/186 Multi-Mode Radar (MMR) currently integrated on CV-22 aircraft. This effort includes development of the CV-22 SOF Common TF/TA SKR Operational Flight Program (OFP) software, and development of CV-22 platform software and hardware to support integration and test.												
FY 2020 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) SF200 / CV-22	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Continue integration/testing of CV-22 SOF Common TF/TA SKR Operational Flight Program (OFP) software development and continues integration/testing of the CV-22 SOF Common TF/TA (Silent Knight) radar. FY 2021 Plans: Continues integration/testing of CV-22 SOF Common TF/TA SKR Operational Flight Program (OFP) software development and continues integration/testing of the CV-22 SOF Common TF/TA (Silent Knight) radar. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$12.943 million is due to transitioning to final phases of developmental testing of CV-22 SOF Common TF/TA SKR.			
Title: CV-22 Block 20 Systems Description: Improves situational awareness, weapons, avionics, survivability, maneuverability, mission deployment, reliability, and maintainability of the CV-22 platform. Included within Block 20 is the Full-azimuth Defensive Weapon System (FDWS). FDWS provides the CV-22 with the capability to suppress threats in the forward hemisphere while the aircraft is in the critical phase of landing and takeoff at the mission objective. The FDWS integrates the fielded GAU-17 belly gun system currently employed on the USMC MV-22 aircraft with the SOF peculiar color helmet mounted display (CHMD) and cockpit firing controls for pilot operation. FY 2020 Plans: Continue engineering and integration/testing of Block 20 FDWS onto CV-22. Previous efforts leading up to FY20 were MFP-4 funded. FY 2021 Plans: Continues engineering integration/testing of Block 20 FDWS onto CV-22. Previous efforts leading up to FY20 were MFP-4 funded. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$1.635 million is due to increased engineering and integration/testing of the Block 20 FDWS onto CV-22.	-	0.494	2.129
Accomplishments/Planned Programs Subtotals	27.344	28.081	16.773

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PROC/1000CV22: CV-22 SOF Modification	34.029	17.256	14.829	-	14.829	38.770	45.569	70.188	71.591	Continuing	Continuing
• PROC/V022A0: Aircraft Procurement CV-22 (MYP)	-	-	-	-	-	-	-	-	-	0.000	4,415.234

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>				Project (Number/Name) SF200 / CV-22		

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E1/0401318F: <i>RDT&E, USAF</i>	18.502	16.606	14.873	-	14.873	15.183	15.459	-	-	64.350	225.577
• RDT&E/0604262N: <i>V-22 RDT&E, N BA-05</i>	143.079	184.705	133.425	-	133.425	110.559	125.764	111.218	-	184.398	1,105.301

Remarks

D. Acquisition Strategy

When possible, rapid prototyping will be incorporated in the acquisition strategies below to develop, demonstrate, and evaluate residual operational capabilities. The SKR was developed by USSOCOM to provide a SOF Common TF/TA capability for SOF aircraft. The SKR replaces the obsolescing APQ-186 TF/TA multimode radar on the CV-22. The acquisition strategy for the CV-22 SOF Common TF/TA SKR program is to procure radar units and radar software modifications through the USSOCOM SKR program management office, buy aircraft modification kits, and integrate SKR into CV-22 aircraft using a mixture of both sole source and competitive contracts.

The Block 20 Full-azimuth Defensive Weapon System (FDWS) will be based on modifications to the legacy Defensive Weapon System (DWS) currently fielded on USMC MV-22 aircraft and previously ground tested on a CV-22. These modifications will integrate the DWS with the CV-22 pilots color helmet mounted displays and cockpit controls to correct deficiencies/improve system effectiveness. They will be awarded on a competitive EMD contract for development.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF200 / CV-22					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CV-22 SF Common TF/ TA Silent Knight Radar (SKR) - Operational Flight Program (OFP) Development	C/CPFF	Various : Various	5.417	13.985	Nov 2018	16.123	Nov 2019	7.720	Nov 2020	-		7.720	Continuing	Continuing	-
CV-22 SF Common TF/TA SKR- Integration	C/CPFF	Various : Various	5.774	12.434	Feb 2019	9.082	Feb 2020	3.982	Nov 2020	-		3.982	Continuing	Continuing	-
CV-22 Block 20 Systems	Various	Various : Various	1.057	-		0.494	Feb 2020	2.129	Nov 2020	-		2.129	Continuing	Continuing	-
Subtotal			12.248	26.419		25.699		13.831		-		13.831	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CV-22 SF Common TF/ TA (Silent Knight) Radar - OFP	C/CPFF	Various : Various	1.241	0.404	Nov 2018	1.132	Nov 2019	2.412	Nov 2020	-		2.412	Continuing	Continuing	-
CV-22 SF Common TF/ TA (Silent Knight) Radar - Integration	C/CPFF	Various : Various	0.511	0.521	Feb 2019	1.250	Feb 2020	0.530	Nov 2020	-		0.530	Continuing	Continuing	-
Prior Year	Various	Various : Various	1.936	-		-		-		-		-	0.000	1.936	-
Subtotal			3.688	0.925		2.382		2.942		-		2.942	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			15.936	27.344		28.081		16.773		-		16.773	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

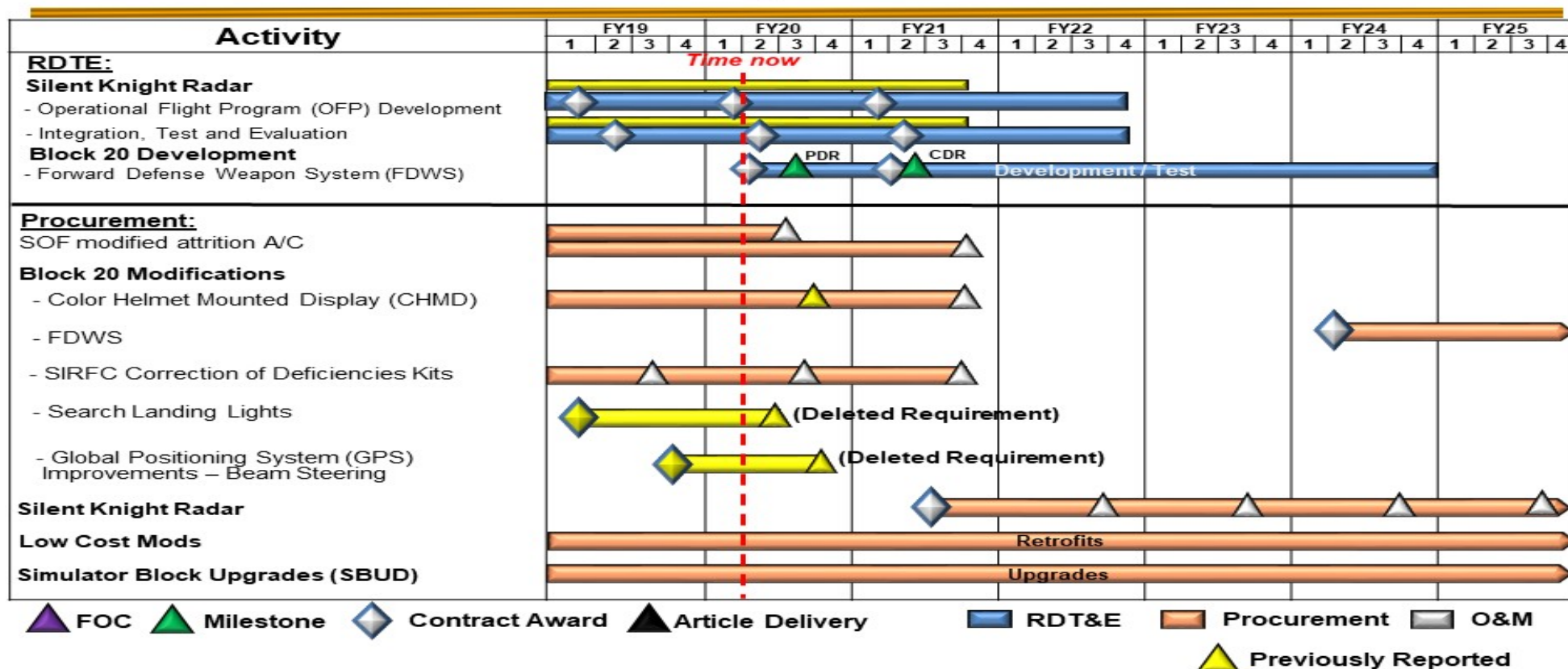
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF200 / CV-22

CV-22 PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) SF200 / CV-22	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CV-22				
SOF Common TF/TA (Silent Knight) Radar - OFP Development	1	2019	4	2022
SOF Common TF/TA (Silent Knight) Radar - Radar Integration, Test & Evaluation	1	2019	4	2022
Block 20 Full-azimuth Defensive Weapon System (FDWS) Development/Test	2	2020	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF300 / Armed Overwatch/Targeting			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
SF300: Armed Overwatch/Targeting	-	0.000	0.000	5.000	-	5.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Armed Overwatch provides Special Operations Forces (SOF) deployable and sustainable aircraft systems fulfilling Close Air Support, Precision Strike, and SOF Intelligence, Surveillance & Reconnaissance (ISR) requirements in austere and permissive environments for the Countering-Violent Extremist Organizations mission. Armed Overwatch missions include: Armed ISR, Strike Coordination & Reconnaissance, and Airborne Forward Air Control. The funding in this project supports development, integration, prototype demonstrations, testing of SOF-unique capabilities and Air Worthiness Release efforts.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2019	FY 2020	FY 2021	
Title: Armed Overwatch/Targeting									-	-	5.000	
Description: The funding in this project supports development, integration, prototype demonstrations, testing of SOF-unique capabilities and Air Worthiness Release efforts.												
FY 2021 Plans: Initiates and completes development, integration, prototype demonstrations, testing of SOF-unique capabilities and Air Worthiness Release efforts.												
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$5.000 million provided as a departmental directed requirement from the United States Air Force (Program Element 0207100F transfer).												
Accomplishments/Planned Programs Subtotals									-	-	5.000	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• PROC/0201ARMOWT: Armed Overwatch/Targeting	-	-	101.000	-	101.000	170.000	204.000	208.000	210.000	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Armed Overwatch/Targeting: These technologies will be pursued via rapid prototyping and/or rapid fielding, when appropriate, to industry partners for flight demonstrations in FY21. The demonstrations will inform a best value decision for follow on production contract.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) SF300 / Armed Overwatch/Targeting					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Armed Overwatch/ Targeting: Prototype Testing/Demonstration	C/FFP	Various : Various	-	-		-		5.000	Oct 2020	-		5.000	Continuing	Continuing	-
Subtotal			-	-		-		5.000		-		5.000	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		0.000		5.000		-		5.000	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

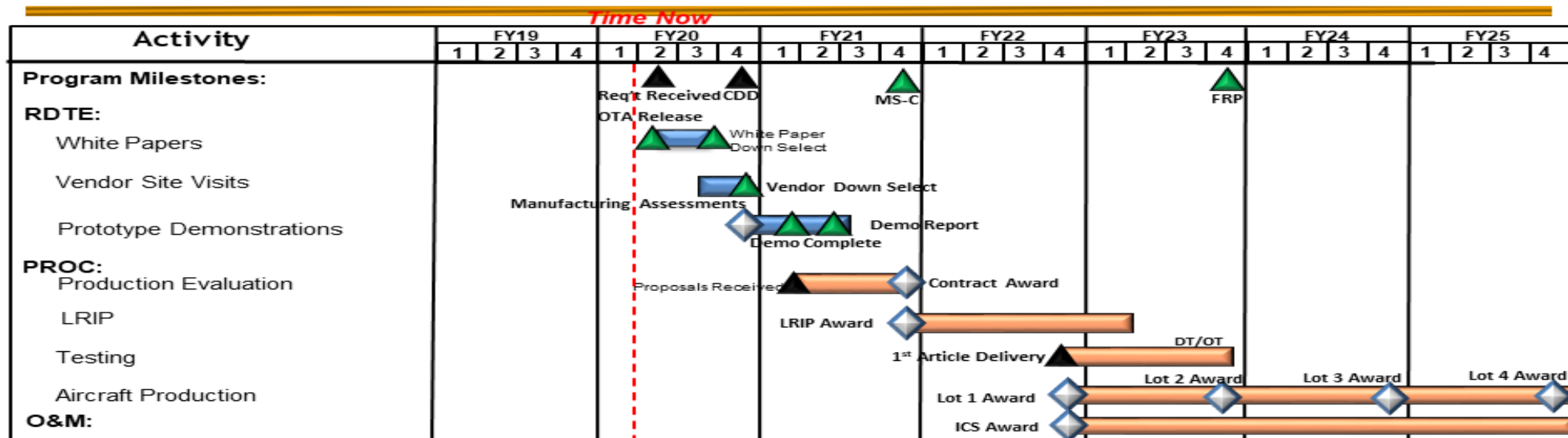
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
SF300 / Armed Overwatch/Targeting

Armed Overwatch/Targeting PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) SF300 / <i>Armed Overwatch/Targeting</i>
--------------------------------------------------	------------------------------------------------------------------------------------	--------------------------------------------------------------------------

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Armed Overwatch/Targeting</i>				
Prototype Testing/Demonstration	1	2021	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) S750 / Mission Training and Preparation Systems			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S750: Mission Training and Preparation Systems	34.573	7.251	8.595	9.630	-	9.630	9.548	9.747	9.972	10.172	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the definition, design, development, prototyping, integration, and testing of Mission Training and Preparation Systems (MTPS) to support training, avoid obsolescence, and maintain simulator concurrency with weapon system configurations; support mission planning and rehearsal systems enhancements required to meet Special Operations Force (SOF)-unique mission requirements and correct deficiencies identified in previous testing; and support mission planning and rehearsal capabilities in current MTPS. The MTPS project also includes program management, systems engineering, configuration management, architecture development, risk reduction, and trade study initiatives, as well as initiatives to assure interoperability and commonality between diverse SOF training systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Special Operations Mission Planning and Execution (SOMPE)	7.251	8.595	9.630
<p>Description: Special Operations Mission Planning and Execution (SOMPE) develops, integrates, tests, and validates software enhancements required to meet SOF-unique requirements for, and correct deficiencies to, mission planning, preview, and execution software tools to support all phases of SOF operations from deliberate to time-critical. The SOMPE project automates time-sensitive planning activities and provides enhanced situational awareness during mission execution. SOMPE provides the interoperable environment for SOF adaptive planning to integrate global operations including, but not limited to, precision strike software, digital navigation, and Unmanned Aerial Systems (UAS) command and control. This project also provides the integration of SOMPE with multi-dimensional visualization systems, providing immersive mission rehearsal in minimal timeframes from the SOMPE mission plan. SOMPE is embedded in the USSOCOM Headquarters, Theater Special Operations Commands (TSOC), Joint Special Operations Task Forces, Joint Special Operations Aviation Components, SOF warfighters, and SOF warfighter platforms.</p> <p>FY 2020 Plans: Continue development of software applications to address increased SOF-unique aviation, ground, and maritime mission planning requirements; data transfer software from mission planning systems to SOF helicopters, airplanes, and simulator/rehearsal systems; and automated performance models and performance prediction software. Continue updates to mission planning, data transfer, and performance software. Continue development of software applications for smaller mobile computer devices (tablets, smart phones, etc).</p> <p>FY 2021 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) S750 / <i>Mission Training and Preparation Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
<p>Continues development of software applications to address increased SOF-unique aviation, ground and maritime mission planning requirements; data transfer software from mission planning systems to SOF helicopters, airplanes, and simulator/rehearsal systems; and automated performance models and performance prediction software. Continues updates to mission planning, data transfer, and performance software. Continues development of software applications for smaller mobile computer devices (tablets, smart phones, etc).</p> <p><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Increase of \$1.035 million is due to product development and integration of new software capabilities within the Mission Planning and Execution Application.</p>			
Accomplishments/Planned Programs Subtotals		7.251	8.595
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>SOMPE comprises multiple mission planning software development contracts awarded to developers for each project effort. Acquisition strategies depend on the type of development effort. For minor software development projects, contracts may be awarded as sole source acquisitions from existing contract vehicles. For major software development projects, contracts may be awarded as limited or full and open competition acquisitions. Individual acquisition strategies are developed as the scope of software development projects are identified and defined.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) S750 / Mission Training and Preparation Systems					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Special Operations Mission Planning and Execution (SOMPE) Software Development and Integration	MIPR	Various : Various	27.314	6.073	Jan 2019	7.032	Jan 2020	7.880	Jan 2021	-		7.880	Continuing	Continuing	-
Subtotal			27.314	6.073		7.032		7.880		-		7.880	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOMPE Software	MIPR	Special Operations Mission Planning Office : Fort Eustis, VA	2.326	0.371	Feb 2019	0.388	Feb 2020	0.434	Feb 2021	-		0.434	Continuing	Continuing	-
Subtotal			2.326	0.371		0.388		0.434		-		0.434	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOMPE Software	C/CPFF	Wyle-CAS : Huntsville, AL	4.933	0.807	Jan 2019	1.175	Jan 2020	1.316	Jan 2021	-		1.316	Continuing	Continuing	-
Subtotal			4.933	0.807		1.175		1.316		-		1.316	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			34.573	7.251		8.595		9.630		-		9.630	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

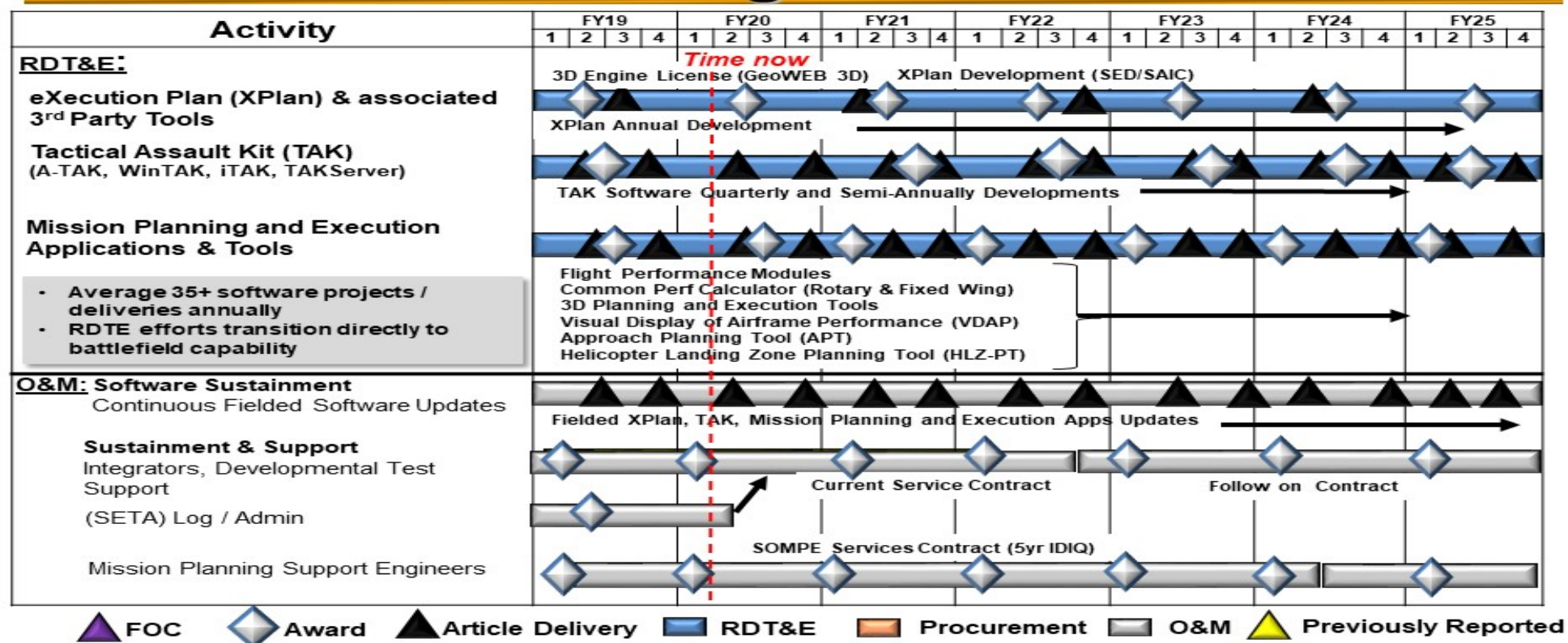
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
S750 / Mission Training and Preparation Systems

Special Operations Mission Planning & Execution (SOMPE) PEO Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) S750 / <i>Mission Training and Preparation Systems</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Special Operations Mission Planning and Execution (SOMPE)</i>				
eXecution Plan (XPlan) & Associated 3rd Part Tools	1	2019	4	2025
Tactical Assault Kit (TAK)	1	2019	4	2025
Mission Planning and Execution Applications & Tools	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) S875 / AC/MC-130J			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S875: AC/MC-130J	47.277	16.480	29.391	55.083	-	55.083	53.742	54.797	56.069	57.182	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AC/MC-130J project funds core SOF-unique modifications to replace aging/retired AC-130H Spectre, AC-130W Stinger II, AC-130U Spooky, MC-130E Combat Talon I, MC-130P Combat Shadow, MC-130H Combat Talon II aircraft. The 8 AC-130H Spectre, 12 AC-130W Stinger II and 17 AC-130U Spooky airframes will be replaced with MC-130J aircraft modified with the Precision Strike Package (PSP) to achieve the AC-130J configuration. The AC-130J aircraft will provide close air support, air interdiction, and armed reconnaissance capability. The 14 MC-130E Talon I, 23 MC-130P Combat Shadow, and 20 MC-130H Talon II airframes will be replaced by MC-130J Commando II aircraft with SOF mission modifications. The MC-130J Commando II aircraft with SOF mission modifications provide clandestine single or multi-ship low-level aerial refueling for special operations helicopters and CV-22 aircraft; conduct airdrops of leaflets, small special operations teams, resupply bundles, and combat rubber raiding craft. The Air Force procures and fields the basic aircraft, common support equipment, and trainers for USSOCOM. Incremental upgrade and agile software development approaches will be used to integrate SOF capabilities onto the aircraft and training systems. SOF capabilities include, but are not limited to: Airborne Mission Networking (AbMN), data fusion, threat detection and avoidance, integrated Terrain Following/Terrain Avoidance (TF/TA), electronic warfare, and embedded training. Integrating and automating SOF mission systems that deliver these capabilities is critical to fielding SOF-capable AC/MC-130J aircraft to recapitalize Air Force Special Operations Command's legacy C-130 fleet.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: MC-130J Airborne Mission Networking (AbMN)	4.169	2.688	2.688
Description: AbMN provides aircrew and mission personnel aboard MC-130J aircraft with the ability to send and receive mission-critical data to/from tactical and operational nodes in the battlespace. Capabilities include, but are not limited to, secure Line-of-Sight (LOS)/Beyond Line-of-Sight (BLOS) voice/data communications, friendly force identification, mission tracking, threat identification, full-motion video, collaboration, chat, e-mail, integrated tactical map and data links. AbMN enables SOF to streamline command and control, improve situational awareness, and reduce operational risk through real time exchange of digital information among aircraft, SOF components, and other tactical and operational nodes.			
FY 2020 Plans: Complete contractor ground testing. Begin developmental, operational, and interoperability testing on the MC-130J along with the SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, special missions systems, and electronic warfare systems.			
FY 2021 Plans: Completes developmental, operational, and interoperability testing on the MC-130J along with the SOF Common Terrain Following/Terrain Avoidance (TF/TA) radar, special missions systems, and electronic warfare systems.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems		Project (Number/Name) S875 / AC/MC-130J	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
None.					
Title: Integrated Tactical Mission Systems (ITMS)			12.311	26.703	52.395
Description: The ITMS program increases operational crew performance and aircraft survivability by integrating the MC-130J green aircraft and multiple SOF mission systems as an interoperable system-of-systems. Automated software capabilities will be developed, integrated, and tested with SOF-peculiar and green aircraft flight information, displays, and controls through the Special Mission Systems (SMS) suite. By increasing system-of-systems data interoperability through an Open Mission Systems (OMS) compliant Modular Open System Architecture (MOSA), an agile software development infrastructure will be employed to integrate multiple subsystems and continuously deliver automated software capabilities. Capabilities include, but are not limited to; automated route replanning, tactical flight management, integrated aircraft defensive systems, defensive countermeasures, and embedded training. The NextGen Special Mission Processor (SMP) resolves current diminishing manufacturing sources issues with a MOSA compliant design to perform central processing for ITMS software. ITMS enables dynamic operations with integrated real-time information, automation, and decision making data for safe TF/TA flight and mission execution (MC-130J aircraft) and seamless employment of the PSP (AC-130J aircraft).					
FY 2020 Plans: Continue capability prototype and demonstration, infrastructure development, system-of-systems integration, tactical map enhancements, TF/TA integration, and increased situational awareness capabilities. Continue OMS development for data and communications interoperability risk reduction. Complete the NextGen SMP prototype demonstration and continue development to replace the legacy SMP. Continue development of SMS capabilities required for ITMS to include, but not limited to; data fusion, threat correlation, and applications of machine learning and artificial intelligence. Begin Tactical Flight Mission Systems (TFMS), Defensive Countermeasures (DCM), auto route replanner integration and test on the MC-130J.					
FY 2021 Plans: Continues capability prototype and demonstration, infrastructure development, system-of-systems integration, tactical map enhancements, TF/TA integration, and increased situational awareness capabilities. Continues OMS development for data and communications interoperability. Continues development of SMS capabilities required for ITMS to include, but not limited to; data fusion, threat correlation, and applications of machine learning and artificial intelligence. Continues TFMS, DCM, auto route replanner integration and test on the MC-130J. Begins capability replication, performance, and test on the AC-130J.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$25.692 million due to increased development focused on interoperability of MC-130J Common TF/TA Radar, Airborne Mission Network, tactical flight management, defensive countermeasures, and refresh of the MC-130J Software Integration Lab to meet ITMS technical testing requirements.					
Accomplishments/Planned Programs Subtotals			16.480	29.391	55.083

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020			
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>				Project (Number/Name) S875 / <i>AC/MC-130J</i>			

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PROC/2012C130J: <i>AC/MC-130J</i>	163.181	143.232	163.914	-	163.914	213.649	296.535	322.669	333.789	Continuing	Continuing
• PROC/1202PSP: <i>Precision Strike Package</i>	229.674	232.930	243.111	-	243.111	167.714	141.180	134.636	137.334	Continuing	Continuing

Remarks

D. Acquisition Strategy

As a core strategy, rapid prototyping has been incorporated in the acquisition strategies below to develop, demonstrate and evaluate residual operational capabilities.

MC-130J AbMN: Award sole source Cost-Plus-Fixed-Fee contract to develop a battlespace information exchange system for the MC-130J consisting of Government/Commercial-off-the-shelf communications and computing hardware and Government/developmental software. This approach leverages portions of the AC-130J gunship infrastructure design applicable to the MC-130J. After completing developmental and operational flight testing, award a sole source contract for Low Rate Initial Production (LRIP) followed by a competitive Firm-Fixed Price (FFP) contract for production, aircraft integration, and fielding.

ITMS: Develop virtual environment to enable collaborative integration of modular software services procured through competitive, sole source contracts, and use of open mission system compliant standards for hardware and software architecture, software, services, and future subsystems.

The U.S. Air Force procures the basic AC-130J aircraft under the HC/MC-130J Recapitalization procurement program. USSOCOM will fund development, integration, and testing of capability enhancements for SOF-unique mission equipment using an incremental acquisition strategy. Multiple contract awards.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) S875 / AC/MC-130J					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MC-130J Airborne Mission Networking (AbMN)	C/CPFF	Sierra Nevada Corporation : Centennial, CO	15.922	3.441	Nov 2018	1.708	Dec 2019	1.264	Dec 2020	-		1.264	Continuing	Continuing	-
Tactical Flight Management, Auto Route Replanner, Defensive Countermeasures (DCM) and MC-130J Systems Integration	C/CPFF	Lockheed Martin Aeronautics : Marietta	-	1.500	Jul 2019	4.252	Apr 2020	10.870	Nov 2020	-		10.870	Continuing	Continuing	-
Systems Interoperability & Tactical Map enhancements	C/Various	Sierra Nevada Corporation : Nevada	29.906	5.500	May 2019	6.157	Nov 2019	5.436	Dec 2020	-		5.436	Continuing	Continuing	-
Open Mission System (OMS) Capabilities, Integration & Demonstration	C/Various	Various : Various	-	1.511	Aug 2019	4.732	Nov 2019	3.624	Nov 2020	-		3.624	Continuing	Continuing	-
NextGen SMP Demonstration, Development, Integration and Test	C/Various	Various : Various	-	3.800	Aug 2019	4.419	Nov 2019	1.200	Dec 2020	-		1.200	Continuing	Continuing	-
Tactical Flight Management, Auto Route Replanner, DCM and AC-130J Systems Integration	C/Various	Various : Various	-	-		-		9.670	Dec 2020	-		9.670	Continuing	Continuing	-
AC/MC-130J OMS Software Development	C/Various	Various : Various	-	-		-		7.034	Jan 2021	-		7.034	Continuing	Continuing	-
Subtotal			45.828	15.752		21.268		39.098		-		39.098	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Tactical Mission System (ITMS) - Support	C/Various	Various : Various	-	-		3.200	Apr 2020	2.718	Mar 2021	-		2.718	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) S875 / AC/MC-130J					
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		3.200		2.718		-		2.718	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AC-130J	C/Various	Lockheed Martin : Atlanta, GA	0.808	-		-		-		-		-	0.000	0.808	-
MC-130J AbMN Integration and Test	MIPR	USSOCOM Detachment 1 Joint Test Interoperability Command : Eglin AFB, FL	0.641	0.728	Nov 2018	0.980	Dec 2019	1.424	Dec 2020	-		1.424	Continuing	Continuing	-
ITMS - Integration and Test	Sub Allot	USSOCOM Detachment 1 : Eglin AFB, FL	-	-		3.943	Nov 2019	11.843	Jan 2021	-		11.843	Continuing	Continuing	-
Subtotal			1.449	0.728		4.923		13.267		-		13.267	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			47.277	16.480		29.391		55.083		-		55.083	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

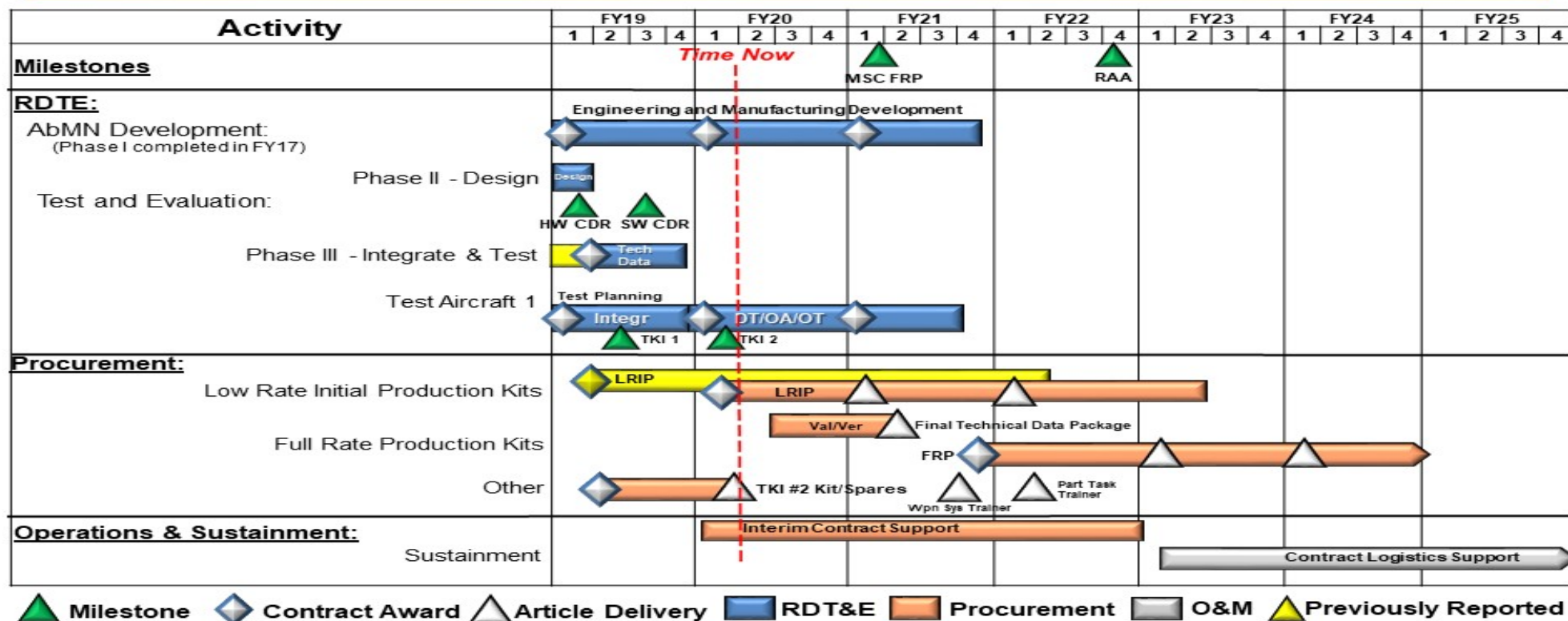
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
S875 / AC/MC-130J

MC-130J Airborne Mission Networking (AbMN) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

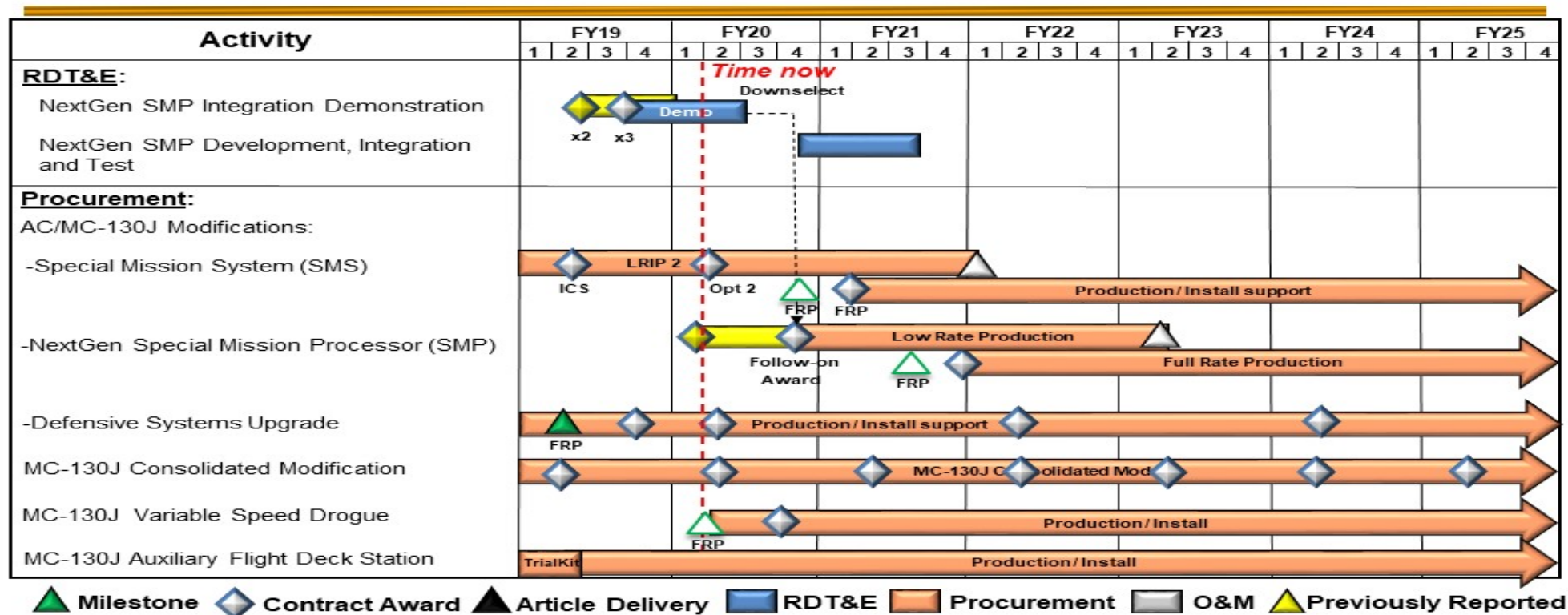
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
S875 / AC/MC-130J

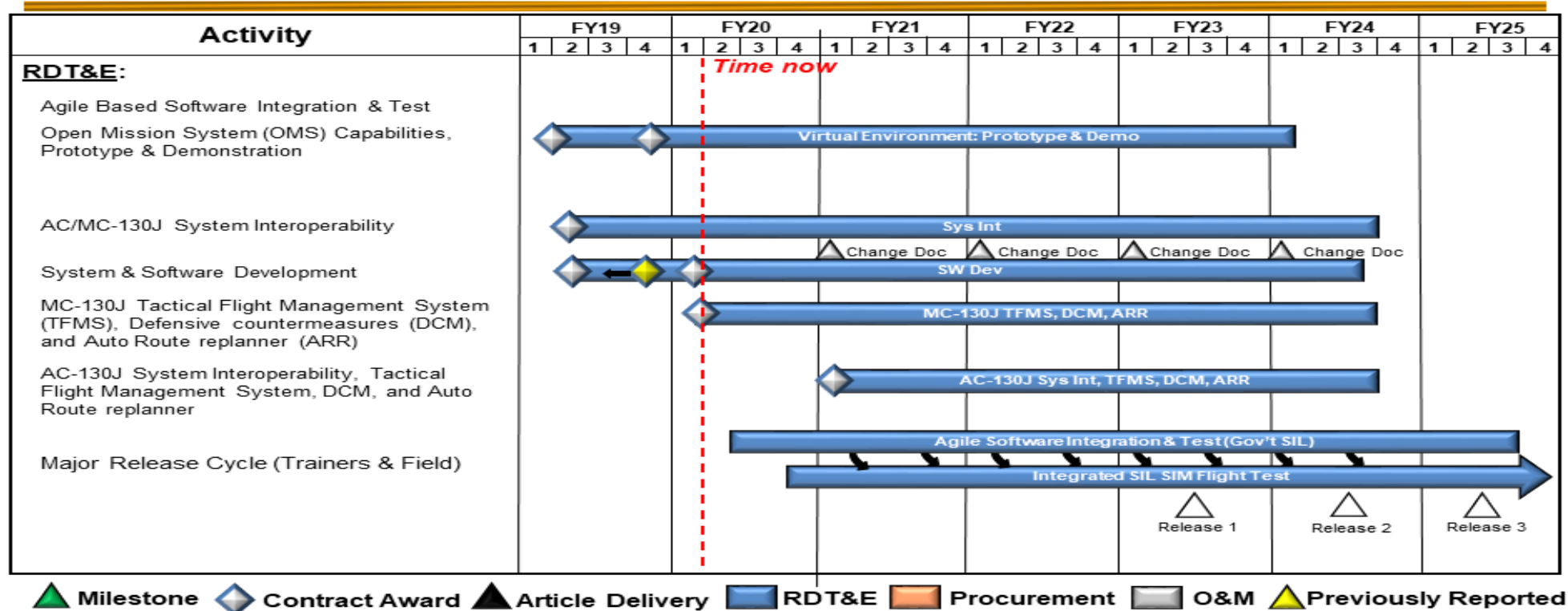
Common AC/MC-130J Mission Systems PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) S875 / AC/MC-130J	

Integrated Tactical Mission Systems (ITMS) PEO Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) S875 / <i>AC/MC-130J</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>MC-130J Airborne Mission Networking (AbMN)</i>				
Engineering and Manufacturing Development	1	2019	4	2021
Phase II Design	1	2019	2	2019
Phase III Integration & Test (Includes Tech Data, Aircraft Integration, & Testing)	2	2019	4	2019
<i>Integrated Tactical Mission Systems (ITMS) Agile Based Software Integration & Test</i>				
Virtual Environment Prototype and Demonstration	1	2019	1	2024
Next Generation Special Mission System Integration Demo	3	2019	3	2020
Agile Software Integration and Test	2	2020	3	2025
Integrated SIL SIM Flight Test	4	2020	4	2025
Tactical Flight Management Systems Development	1	2020	3	2024
Defensive Countermeasures	1	2021	3	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems				Project (Number/Name) D615 / Rotary Wing Aviation			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
D615: Rotary Wing Aviation	251.118	18.858	47.768	41.895	-	41.895	34.459	30.721	30.947	31.523	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development, rapid prototyping, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique rotary wing aviation and training requirements. This project includes modifications to Aircraft Survivability Equipment (ASE) avionics and weapons systems to counter rapidly emerging threats, address cyber security, improve lethality and enhance aircraft self-protection in contested environments. Rotary wing aircraft supported by this project include: MH-60M, MH-47G, and A/MH-6M. These aircraft provide aviation support to SOF in worldwide contingency operations and low-intensity conflicts. They must be capable of rapid deployment, undetected penetration of hostile areas, and operations at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The anti-access/area denial (A2/AD) threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: A/MH-6M Block 3.0 Upgrade Description: This effort funds the development and testing of Special Operations Forces Peculiar (SOF-P) equipment and modifications for the A/MH-6M. It will include software development and testing to integrate new capability, development and qualification of new hardware, and test and evaluation of new weapons, sensors, communications systems, or aircraft modifications that increase systems performance. FY 2020 Plans: Complete Airworthiness and Flight Characteristics (A&FC) testing efforts, Electromagnetic Environmental Effects (E3) testing, and radio communications performance testing. FY 2021 Plans: Begins software updates to incorporate communications upgrades and/or crypto modernization, follow-on testing on Block 3 components to improve sustainability, improved tail rotor blade development and test, improved main rotor transmission study, improved main rotor study, test and evaluate anti-jamming antennas, and weapons system test. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.095 million is due to crypto modernization mandate.	3.008	2.688	2.783
Title: MH-60M Modifications and Upgrades Description: Develops technologies to improve safety and performance of the MH-60 while decreasing operational costs. Efforts include, but are not limited to, MH-60 engineering changes and product improvements to SOF-P equipment, munitions utilized for testing, modifications to ASE and weapons systems designed to counter rapidly emerging threats, improve lethality, and	2.608	6.533	3.428

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) D615 / Rotary Wing Aviation		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
enhance aircraft self-protection in the multi-domain operations (MDO) environment and against near peer threats. The MH-60 Block Upgrades provide the development, integrations, and qualification efforts for the MH-60 helicopter to include flight test support, engineering analysis, documentation, and airworthiness substantiation.				
FY 2020 Plans: Complete Upturned Exhaust System (UES) II qualification and testing, continue integration and testing of technologies to improve safety and decrease operational costs to include aircraft survivability equipment, weapons systems improvement and munitions during testing, such as the Joint Air-to-Ground Missile.				
FY 2021 Plans: Continue testing of Joint Air-to-Ground Missile software, payload restoration efforts, and other technologies to improve safety and decrease operational costs to aircraft survivability equipment, weapons systems improvement, and munitions.				
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$3.105 million due to the completion of the UES II qualification and testing.				
Title: Degraded Visual Environment (DVE)		3.580	0.871	0.579
Description: Solution will fuse information from aircraft sensors to display real-time reference points, obstacles, and landing zone information to the aircrew. The DVE solution will provide MH-47/60 aircrews with visual cues for obstacle avoidance and aircraft control during all phases of flight and significantly increase crew and passenger survivability in DVE. This program addresses SOF-unique requirements for rapid fielding and weight limitations, and capitalizes integration of SOF-P avionics with the unique skills of the SOF aviator.				
FY 2020 Plans: Begin airworthiness release support efforts.				
FY 2021 Plans: Complete airworthiness release documentation for fielding.				
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.292 million due to a reduction in post-test air worthiness/engineering activities.				
Title: Future Vertical Lift (FVL)		0.922	1.208	3.324
Description: Provides for the development of USSOCOM platform capabilities that address SOF-unique requirements. This family of systems significantly increases range, speed, payload, survivability, reliability, and maintainability of vertical lift aircraft to meet emerging mission requirements. USSOCOM will participate in the service-common development of a joint FVL aircraft by				

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems		Project (Number/Name) D615 / Rotary Wing Aviation	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
injecting USSOCOM requirements and equities into the initial development and design efforts to minimize SOF-P modifications to the common aircraft.					
FY 2020 Plans: Provide engineering and design work to ensure SOF-unique requirements are incorporated in the baseline Army aircraft.					
FY 2021 Plans: Continues to provide guidance and infrastructure necessary for FVL to implement a mission systems architecture that enables the integration of SOF capabilities into the aircraft.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$2.116 million is due to increased engineering and design work of SOF-unique requirements.					
Title: Infrared Countermeasures (IRCM)			1.763	3.425	0.625
Description: Provides a low Size, Weight, and Power (SWaP) IRCM capability suitable for the A/MH-6 Mission Enhanced Little Bird with potential use on the MH-60 and MH-47 aircraft. The IRCM program will leverage the Department of Navy developed Distributed Aperture Infrared Countermeasure System by integrating and testing a complete lightweight IRCM systems to include a missile warning system and countermeasure capability. The IRCM program includes development of an infrared exhaust suppressor for the A/MH-6, and flare testing for emerging threats.					
FY 2020 Plans: Begin market research for an infrared exhaust suppressor for the A/MH-6 aircraft. Continue advanced flare testing. Complete qualification testing of missile warning and lightweight IRCM systems.					
FY 2021 Plans: Continues advanced flare testing. Completes development of and begins qualification testing of IR exhaust suppressor for the A/ MH-6 aircraft.					
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$2.800 million is due to completion of qualification testing of a lightweight IRCM system.					
Title: MH-47 Modifications and Upgrades			3.178	8.906	8.455
Description: Develops technologies to improve the performance and safety of the MH-47G and decrease operational costs. Efforts include, but are not limited to, the Active Parallel Actuator Subsystem (APAS). This sub-project also includes modifications to ASE and weapons systems to counter rapidly emerging threats and enhance aircraft self-protection.					
FY 2020 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems		Project (Number/Name) D615 / Rotary Wing Aviation	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
Continue APAS development, including integration with MH-47G subsystems, such as Common Avionics Architecture System. Complete APAS Critical Design Review. FY 2021 Plans: Continues APAS development, including integration with MH-47G subsystems, such as Common Avionics Architecture System. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.451 million is due to planned completion of APAS Critical Design Review.					
Title: Mission Processor Upgrades (MPU) Description: Provides for non-recurring engineering (NRE), systems engineering/testing, and future aircraft architecture studies that support replacement and upgrade of the current mission and video processors for all Army Special Operations Aviation (ARSOA) rotary wing aircraft. Upgrading all internal processors increases the processing power to support critical functionality and emerging technologies that will be integrated into the Common Avionics Architecture System (CAAS). This MPU provides the processing and memory resources required to incorporate the following functions into the General Purpose Processing Unit (GPPU): (1) Global Air Traffic Management replaces ground-based navigation aids with a capability that meets the international requirement that all aircraft be compliant with digital and space-based navigation systems; (2) Cognitive Decision Aiding System fuses information on threat, route, weather, terrain, and friendly forces, instantaneously adjusting an aircraft's route to protect the flight crew in hazardous weather, low levels, night conditions, and next generation ARSOA cockpit. FY 2020 Plans: Continue exploration of the next generation ARSOA cockpit, to include Video Processing Module (VPM) development and testing. FY 2021 Plans: Continue exploration of the next generation ARSOA cockpit, to include architectures studies/development and individual enabling/enhancing technologies FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.016 million due to anticipated work required to be completed in support of the next generation ARSOA cockpit in FY 2021.			0.362	0.604	0.588
Title: Tactical (Airborne) Mission Networking (TMN) Description: Provides for continued development of systems (software and hardware) to enable the aircraft to effectively adapt and overcome the challenges of the highly contested and congested RF environment. This effort will enable the aircrew to use advanced radio waveforms and communications equipment that can survive and thrive in contested and congested radio frequency environments. Upgrading antennas, processors, radios and other enabling communications equipment will be a persistent requirement as the RF environment becomes increasingly more complex. Additionally, the Army intends to upgrade its			-	-	3.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems		Project (Number/Name) D615 / Rotary Wing Aviation	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
networks every two years – so this funding will ensure Special Operations Aircraft can adapt and keep pace with both SOF and conventional forces' communications and networking improvements/upgrades.					
FY 2021 Plans: Begins to develop software and hardware to rapidly incorporate advanced waveforms, advanced communications, and networking hardware onto the ARSOA aircraft.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$3.000 million to support development work on ARSOA aircraft.					
Title: Aircraft Survivability Equipment (ASE) Radio Frequency Countermeasures (RFCM) Upgrades			3.437	15.533	15.613
Description: Develops, integrates, and tests critical active and passive SOF-P aircraft survivability equipment to counter the acknowledged high proliferation of advanced surface-to-air threat systems for the A/MH-6, MH-60, and MH-47. These threat systems are evolving technically at an unprecedented rate, requiring rapid countermeasure system development and immediate spiraled improvements that will reduce the probability of successful engagement, increase the probability of detecting and countering threat systems, and improve the aircraft's ability to continue operating after sustained battle damage. This program includes development and testing of both new systems and Pre-Planned Product Improvements (P3I)/upgrades of fielded survivability equipment, and associated qualification testing. P3I upgrades may include, but are not limited to, expansion of loadsets on existing systems, modernization of legacy components, and studies directed at potential "collaborative off-boarding/on-boarding" detect/countermeasure capabilities to provide expanded coverage for aircrews in a high threat environment.					
FY 2020 Plans: Continue development of new systems, P3I/upgrades of fielded survivability equipment, and continues development of countermeasures. Complete RF improvements test and evaluation. Additional details can be provided under separate cover.					
FY 2021 Plans: Continues development of new systems, P3I/upgrades of fielded survivability equipment, and continues development of countermeasures. Additional details can be provided under separate cover.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.080 million supports development of prototypes and integration.					
Title: Improved Rotary Wing Electro-Optical Sensor (IRES)			-	-	3.500
Description: The IRES program, formally known as Next Generation FLIR, is a Commercial Off The Shelf (COTS)/non-developmental lighter-weight Electro-Optical Sensor System (EOSS) needed to reduce aircraft weight and mitigate obsolescence of the currently fielded Q2 and Q3 FLIR systems on the MH-47, MH-60, and A/MH-6 aircraft. Both assault and attack turreted					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) D615 / <i>Rotary Wing Aviation</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
systems will include multi-spectrum infrared, day TV, laser spot tracker, laser range finder, and laser illuminator with the ability to fuse camera images. The attack turrets will also include a laser designator for targeting capabilities.			
<i>FY 2021 Plans:</i> Begins software changes/integration into A/MH-6, MH-47G, and MH-60M aircraft, and perform combined development and operational testing. Additional details can be provided under separate cover.			
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Increase of \$3.500 million supports the integration of software into ARSOA aircraft.			
Accomplishments/Planned Programs Subtotals	18.858	39.768	41.895

	FY 2019	FY 2020
<i>Congressional Add:</i> Future Vertical Lift (FVL)	-	8.000
<i>FY 2020 Plans:</i> Provides engineering and design work to ensure SOF-unique requirements are incorporated in the baseline Army aircraft.		
Congressional Adds Subtotals	-	8.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0201RWUPGR: <i>Rotary Wing Upgrades and Sustainment</i>	148.907	172.020	211.041	-	211.041	230.870	247.497	267.854	258.750	Continuing	Continuing
• 0201MH60: <i>MH-60 Blackhawk</i>	27.600	25.264	-	-	-	-	-	-	-	981.513	981.513
• 0601MH47: <i>MH-47 Chinook</i>	157.892	206.093	135.482	-	135.482	132.888	135.644	138.951	141.728	Continuing	Continuing

Remarks

D. Acquisition Strategy

• A/MH-6M Block 3.0 Upgrade comprises three distinct efforts: integrated airframe, Block 3 performance kits and avionics upgrades. The airframe efforts (new rotor blades/flight control kits and new shells) will be a sole-source contract to Boeing, owner of the technical data associated with the A/MH-6 airframes. The cockpit avionics architecture will be developed by Rockwell-Collins. Any new hardware components will be Non Developmental Item/Commercial-Off-The-Shelf (COTS) to the extent possible and will be competitively selected. Airframe modification and integration work will be conducted via a contract with the Special Operations Forces Support Activity (SOFSA).

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) D615 / <i>Rotary Wing Aviation</i>
<ul style="list-style-type: none"> • MH-60M Modifications and Upgrades supports systems integration and qualification efforts on MH-60M helicopters. The Mods and Upgrades are executed via various acquisition vehicles and includes, but are not limited to, government and contractor flight test support, engineering analysis, documentation, and airworthiness substantiation. Airframe modification and integration work will be conducted via a contract with the Special Operations Forces Support Activity (SOFSa). • DVE integrates and qualifies a solution to address a safety of flight issue while flying in DVE. A competitive source selection process was conducted, resulting in down-selection of one vendor for the DVE solution which will procure, integrate, and install components to provide real-time “see through” imagery and visual cues for obstacle avoidance and landing zone information during all phases of flight. • FVL is the SOF aviation participation in the Joint FVL effort to develop the next generation of vertical takeoff and landing aircraft and establishes the foundation for the transformation of DOD vertical lift aviation capabilities over the next forty years. • IRCM integrates a mission configurable Missile Warning System and IRCM capability at a weight suitable for the A/MH-6 aircraft. Procurement of systems for integration and test will leverage Department of Navy IRCM development efforts and contracts. The government will integrate the systems onto the A/MH-6 utilizing existing aircraft modification contracts. Will begin evaluation and qualification of an infrared exhaust suppressor for the A/MH-6M aircraft, and continue flare testing for emerging threats. • MH-47 Modifications and Upgrades will develop technologies to improve performance and safety of the MH-47G and decrease operational costs. Efforts include the APAS. The upgrades and modifications are executed via various acquisition vehicles and consist mostly of government and contractor executed integration, testing, and qualification efforts with some analytical engineering services to be completed. Post-production block modifications are accomplished via a contract with the Special Operations Forces Support Activity (SOFSa). • MPU provides for future cockpit architecture studies that will help define the replacement of current mission and video processors for all ARSOA platforms. Additionally it will address near term required upgrades to existing components. Potential upgrades will be through existing Original Equipment Manufacturers (OEM), while the future cockpit architecture studies will be competitively awarded. • Tactical (Airborne) Mission Networking provides for future communications and networking capability exploration and solution development that will ensure ARSOA platforms can communicate through voice and data in a highly contested and congested RF environment. Additionally, it will ensure ARSOA aircraft can maintain interoperability with the SOF and conventional ground forces’ plan of rapidly and continually updating their communications and networking infrastructure. Non-developmental communication equipment will be procured through existing DOD contracts. Aircraft integration will be through existing aircraft modification contracts. • ASE RFCM Upgrades develops and tests both new systems and pre-planned product improvements/upgrades of fielded aircraft survivability systems and countermeasures. For new systems, other services’ development and testing contracts are leveraged to the maximum extent possible. Upgrades of fielded equipment are typically accomplished by the OEM. 		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) D615 / Rotary Wing Aviation
<p>• IRES integrates non-developmental multi-spectral electro-optical sensor systems (EOSS) onto SOF Rotary Wing aircraft to address legacy system obsolescence, reduce aircraft weight, and provide improved system performance. To the maximum extent possible, systems will be procured through existing USSOCOM and Services contracts. Aircraft integration will be through existing aircraft modification contracts.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) D615 / Rotary Wing Aviation
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Degraded Visual Environment (DVE)	C/Various	PM TAPO : Fort Eustis, VA	66.168	3.580	Feb 2019	0.871	Apr 2020	0.579	Apr 2021	-		0.579	Continuing	Continuing	-
MH-47 Modifications and Upgrades	C/Various	PM TAPO : Fort Eustis, VA	38.753	3.178	Dec 2018	8.906	Nov 2019	8.455	Nov 2020	-		8.455	Continuing	Continuing	-
Tactical (Airborne) Mission Networking (TMN)	C/Various	PM TAPO : Fort Eustis, VA	-	-		-		3.000	Mar 2021	-		3.000	Continuing	Continuing	-
Aircraft Survivability Equipment (ASE) Radio Frequency Countermeasures (RFCM) Upgrades	C/Various	PM TAPO : Fort Eustis, VA	13.002	3.437	Aug 2019	15.533	Mar 2020	15.613	Mar 2021	-		15.613	Continuing	Continuing	-
Improved Rotary Wing Electro-Optical Sensor (IRES), formerly known as Next Generation Forward Looking Infrared (NGFLR)	C/Various	PM TAPO : Fort Eustis, VA	-	-		-		3.500	Dec 2020	-		3.500	Continuing	Continuing	-
Prior Years Funding	C/Various	PM MELB : Fort Eustis, VA	59.820	-		-		-		-		-	0.000	59.820	-
Subtotal			177.743	10.195		25.310		31.147		-		31.147	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Future Vertical Lift (FVL)	C/Various	PM TAPO : Fort Eustis, VA	3.131	0.922	Feb 2019	1.208	Feb 2020	3.324	Feb 2021	-		3.324	Continuing	Continuing	-
FVL Congressional Add	C/Various	PM TAPO : Fort Eustis, VA	-	-		8.000	Feb 2020	-		-		-	0.000	8.000	-
Subtotal			3.131	0.922		9.208		3.324		-		3.324	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) D615 / Rotary Wing Aviation
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
A/MH-6M Block 3.0 Upgrades	C/Various	PM MELB : Fort Eustis, VA	29.028	3.008	Jan 2019	2.688	Jan 2020	2.783	Jan 2021	-		2.783	Continuing	Continuing	-
MH-60M Modification and Upgrades	C/Various	PM TAPO : Fort Eustis, VA	4.969	2.608	Mar 2019	6.533	Jul 2020	3.428	Mar 2021	-		3.428	Continuing	Continuing	-
Infrared Countermeasures Integration and Testing	C/Various	PM TAPO : Fort Eustis, VA	10.900	1.763	Apr 2019	3.425	Feb 2020	0.625	Feb 2021	-		0.625	Continuing	Continuing	-
Mission Processor Upgrades	C/Various	PM TAPO : Fort Eustis, VA	0.500	0.362	Aug 2019	0.604	Apr 2020	0.588	Apr 2021	-		0.588	Continuing	Continuing	-
Prior Years Funding	C/Various	Various : Various	24.847	-		-		-		-		-	0.000	24.847	-
Subtotal			70.244	7.741		13.250		7.424		-		7.424	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			251.118	18.858		47.768		41.895		-		41.895	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

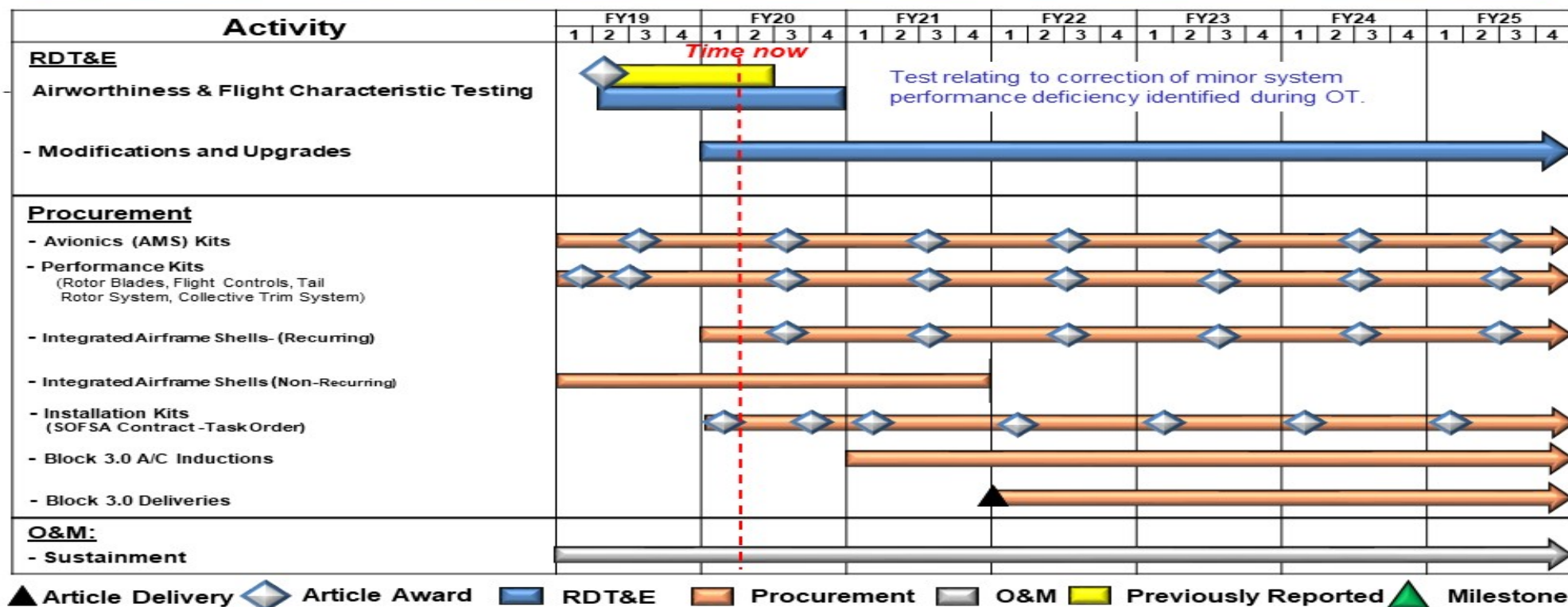
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

A/MH-6 Block 3 PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

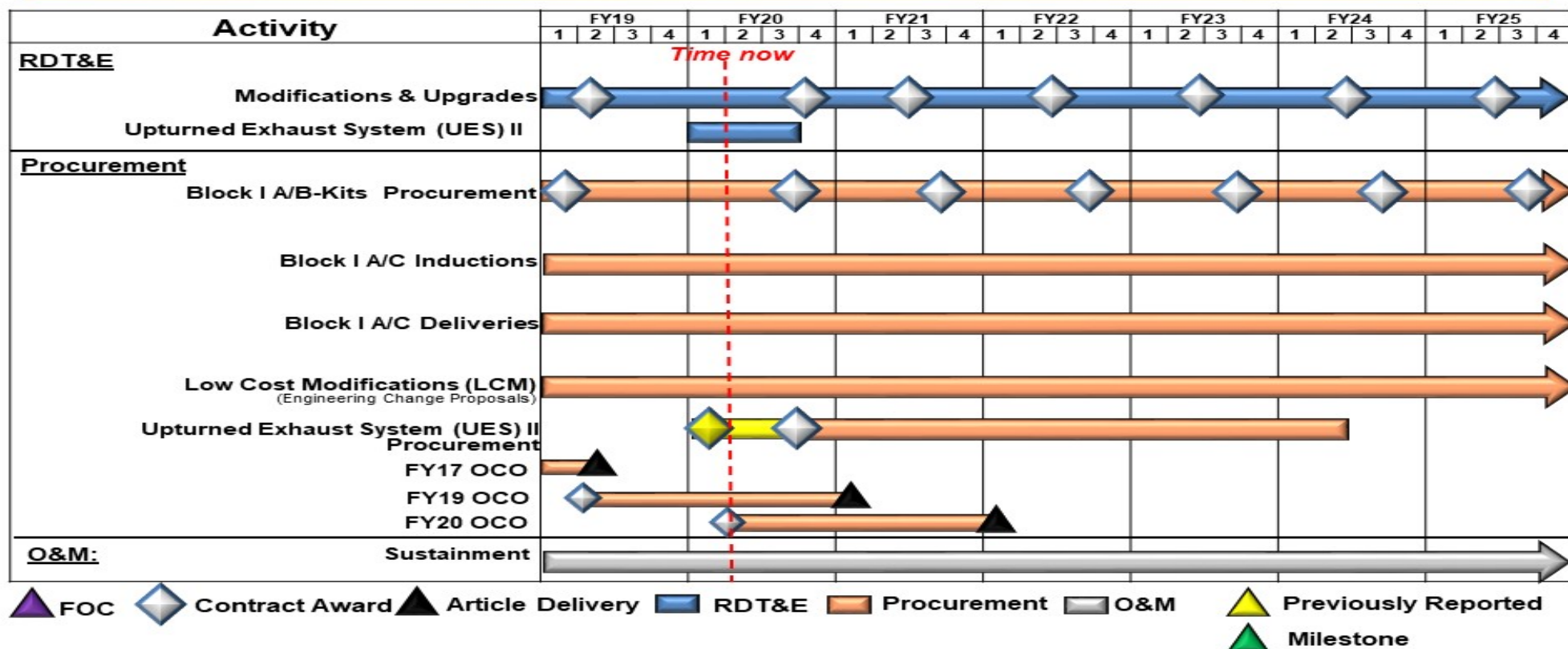
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

MH-60M Program PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

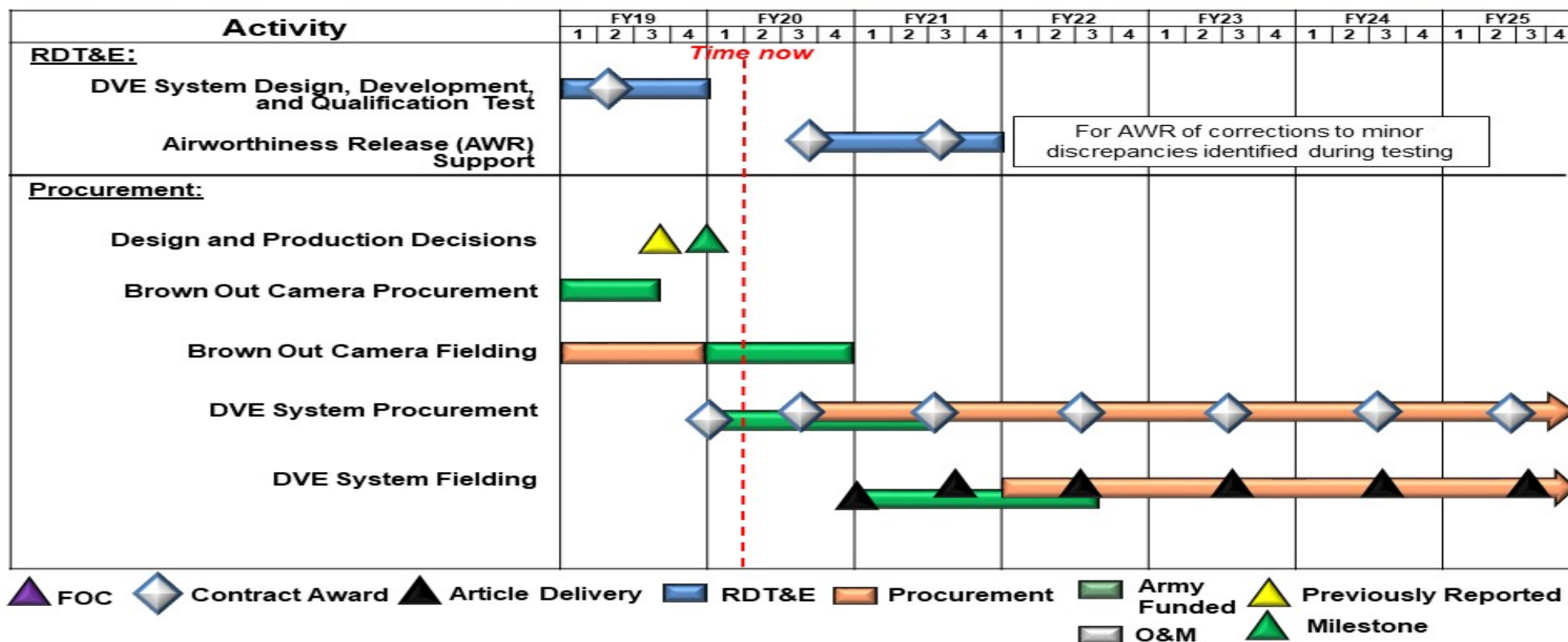
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

Degraded Visual Environment (DVE) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

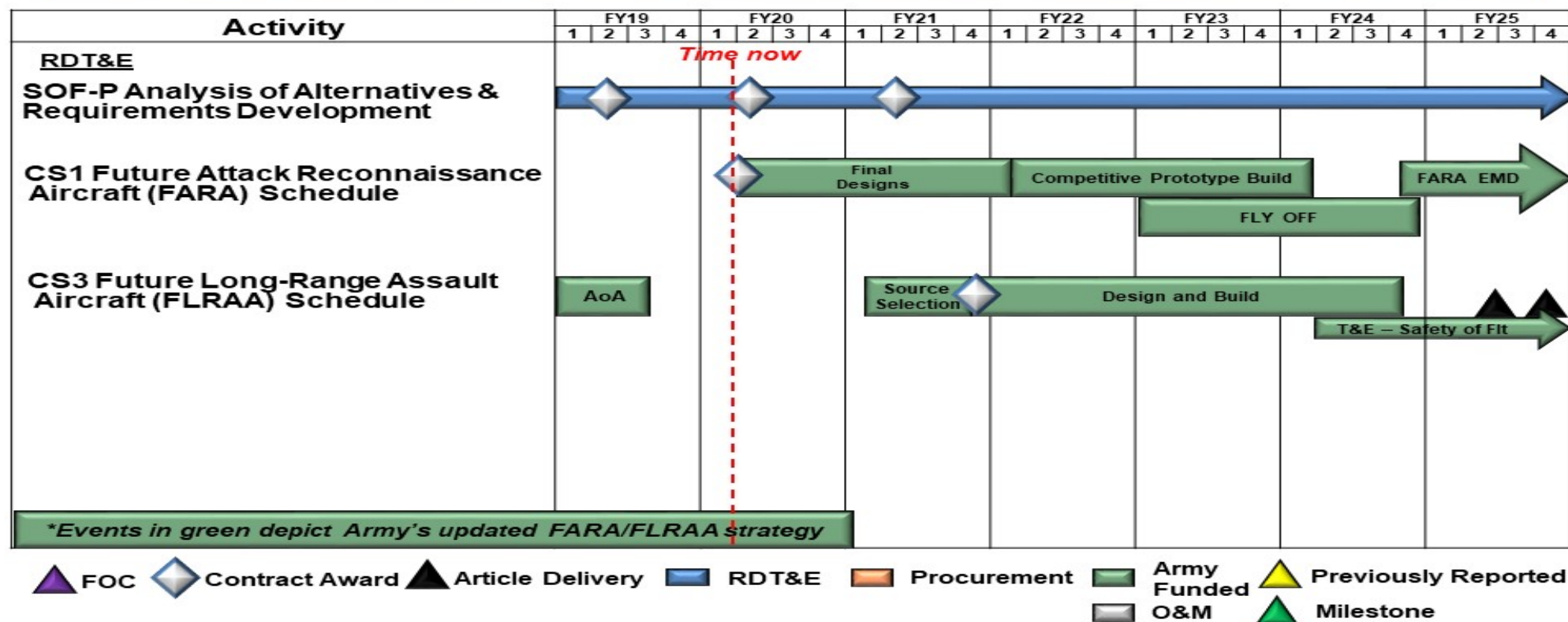
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

Future Vertical Lift (FVL) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

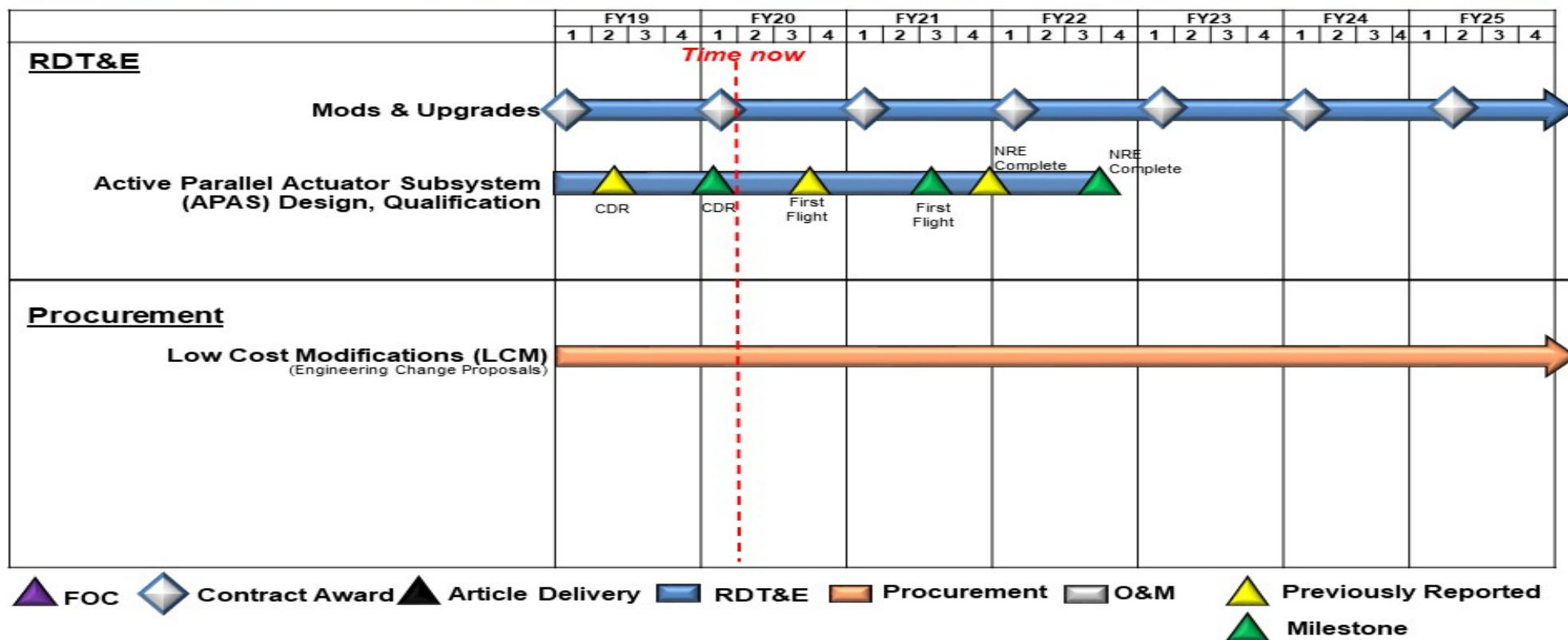
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

MH-47 Program PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

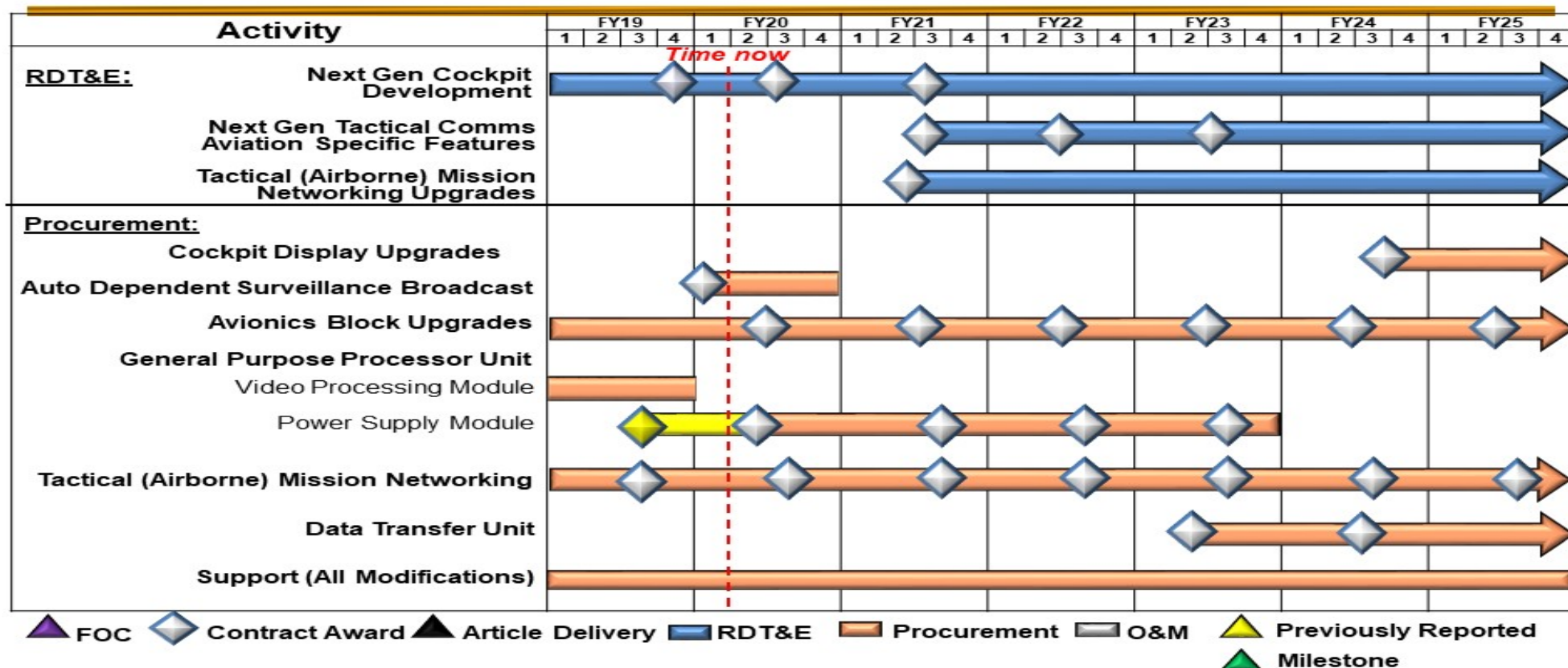
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

Mission Processor Upgrades (MPU) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

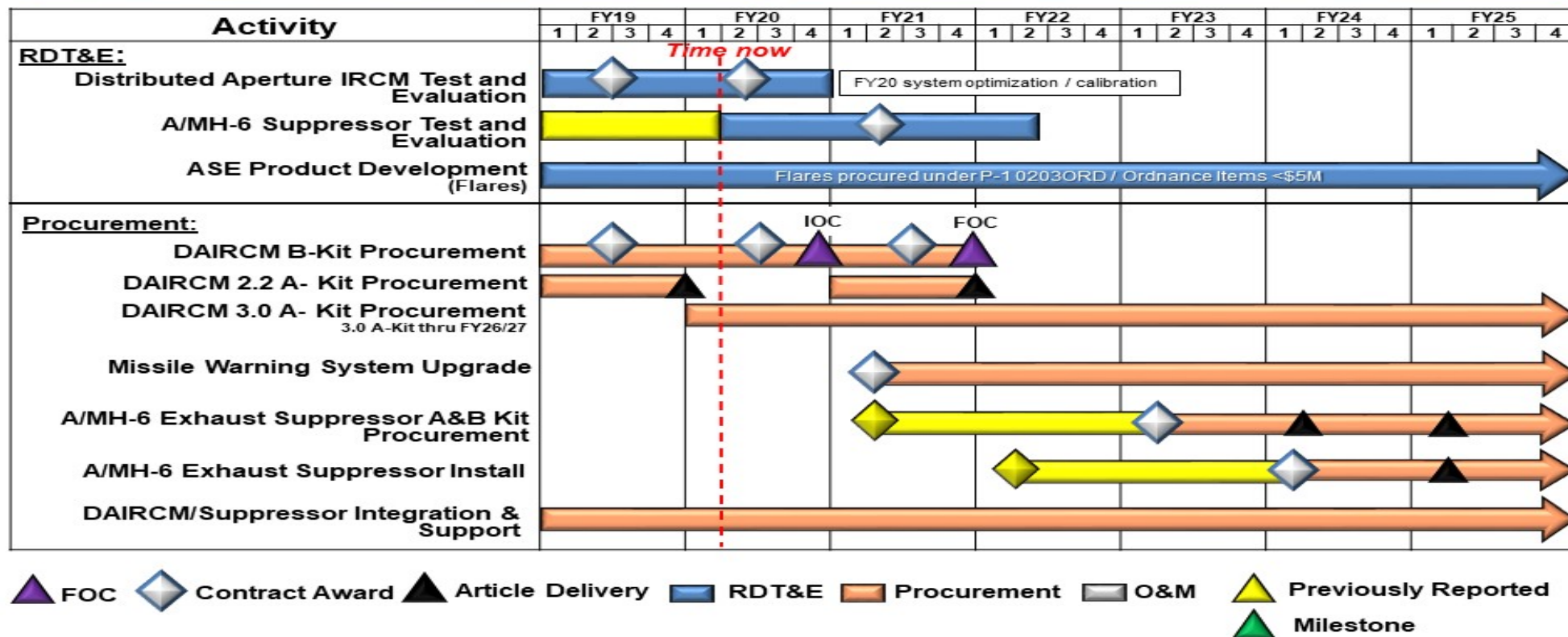
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

Aircraft Survivability Equipment (ASE) Infrared Countermeasures (IRCM) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

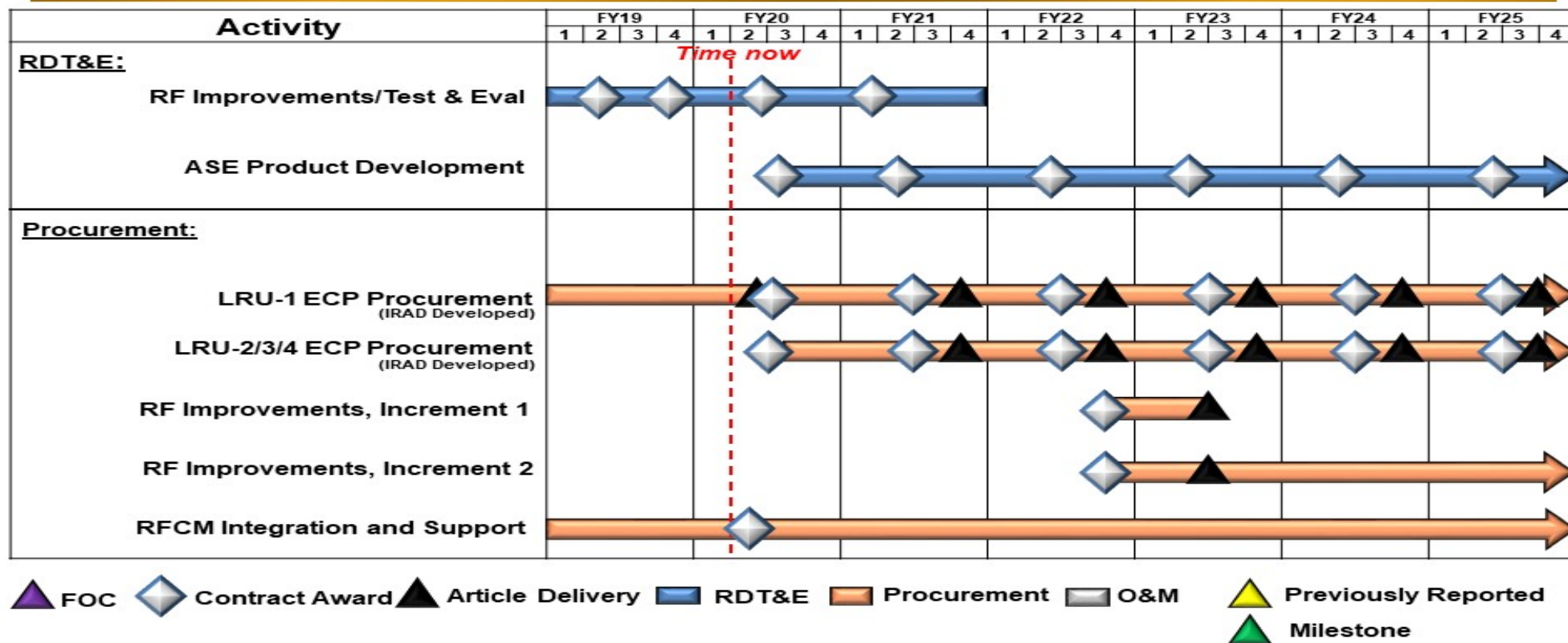
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160403BB / Aviation Systems

Project (Number/Name)
D615 / Rotary Wing Aviation

ASE Radio Frequency Countermeasures (RFCM) PEO-Managed Schedule

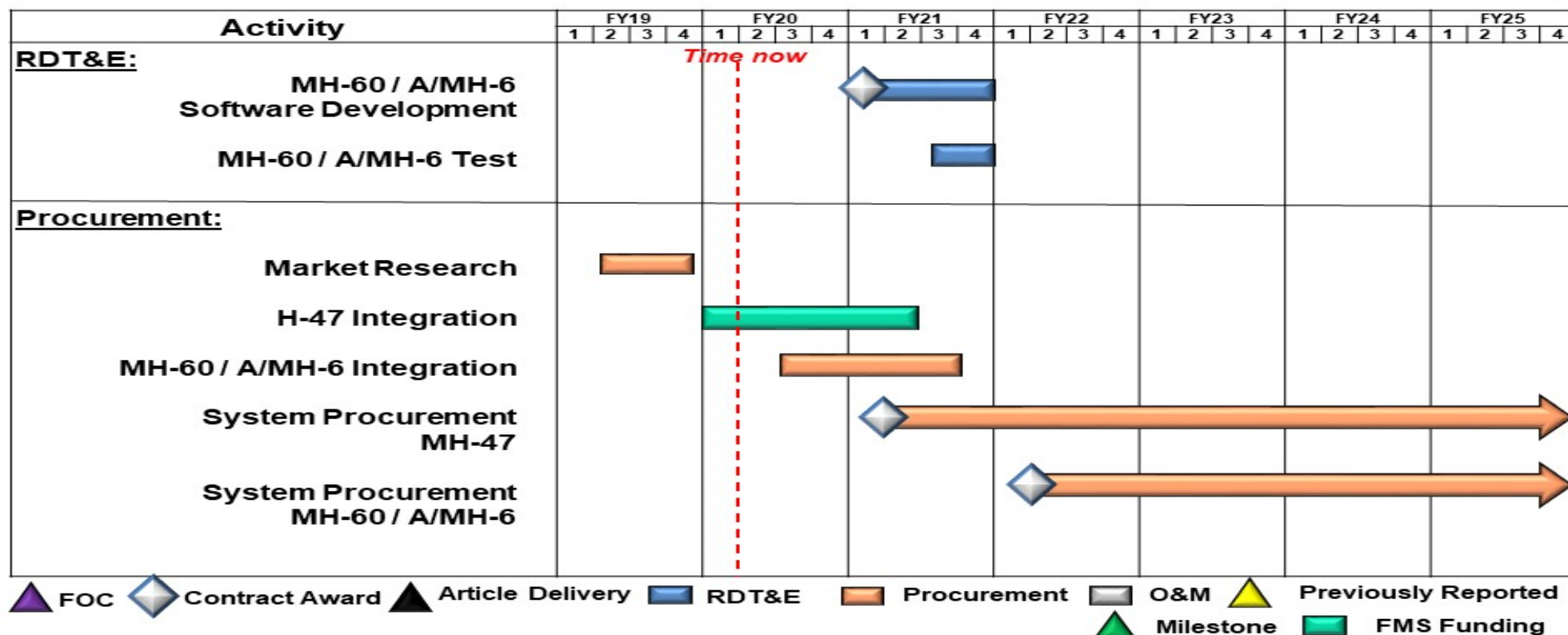


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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / Aviation Systems	Project (Number/Name) D615 / Rotary Wing Aviation	

Improved Rotary Wing Electro-Optical PEO-Managed Sensor (IRES) Schedule

(formerly NGFLR)



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command

Date: February 2020

Appropriation/Budget Activity

0400 / 7

R-1 Program Element (Number/Name)

PE 1160403BB / Aviation Systems

Project (Number/Name)

D615 / Rotary Wing Aviation

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
A/MH-6M Block 3.0 and Modifications				
Airworthiness and Flight Characteristics Testing	2	2019	4	2020
Modifications and Upgrades	1	2020	4	2025
MH-60M Modifications and Block Upgrades				
Modifications and Upgrades	1	2019	4	2025
Upturned Exhaust System (UES) II Development	1	2020	3	2020
Degraded Visual Environment				
Design, Development, and Qualification Test	1	2019	4	2019
Airworthiness Release (AWR) Support	3	2020	4	2021
Future Vertical Lift (FVL)				
SOF-P Analysis of Alternatives/Requirements Development	1	2019	4	2025
MH-47 Modifications and Block Upgrades				
Modifications and Upgrades	1	2019	4	2025
Active Parallel Actuator Subsystem (APAS) Design, Qualification	1	2019	3	2022
Mission Processor Upgrades (MPU)				
Next Gen Cockpit Development	1	2019	4	2025
Next Gen Tactical Comms Aviation Specific Features	3	2021	4	2025
Tactical (Airborne) Mission Networking Upgrades	2	2021	4	2025
Aircraft Survivability Equipment (ASE) Infrared Countermeasures (IRCM)				
Distributed Aperture Infrared Countermeasure System Test and Evaluation	1	2019	4	2020
Suppressor Test and Evaluation	2	2020	2	2022
ASE Product Development (Flare)	1	2019	4	2025
ASE Radio Frequency Countermeasures (RFCM)				

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160403BB / <i>Aviation Systems</i>	Project (Number/Name) D615 / <i>Rotary Wing Aviation</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
RF Improvements Test and Evaluation	1	2019	4	2021
ASE Product Development (Adaptive ECM, Array, Signature Reduction)	3	2020	4	2025
<i>Improved Rotary Wing Electro-Optical Sensor (IRES), formerly known as Next Generation Forward Looking Infrared (NGFLR)</i>				
Software Development	1	2021	4	2021
Test	3	2021	4	2021

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	584.882	10.625	15.484	19.558	-	19.558	20.142	19.681	20.163	21.056	Continuing	Continuing
S400: <i>SO Intelligence Systems</i>	584.882	10.625	15.484	19.558	-	19.558	20.142	19.681	20.163	21.056	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element is part of the Military Intelligence Program (MIP) that provides for the identification, development, rapid prototyping and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. Sub-projects address the primary areas of intelligence dissemination, sensor systems, tagging, tracking, and locating devices, integrated threat warning to SOF mission platforms, biometrics and forensic site exploitation and tactical exploitation of national system capabilities. USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities into the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture employ the latest standards and technology by transitioning from separate systems to full integration with the Global Information Grid (GIG). The GIG allows SOF elements to operate with any force combination in multiple environments. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>
Previous President's Budget	10.625	15.484	17.974	-	17.974
Current President's Budget	10.625	15.484	19.558	-	19.558
Total Adjustments	0.000	0.000	1.584	-	1.584
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	1.584	-	1.584

Change Summary Explanation

Funding:

FY 2019: None.

FY 2020: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	PE 1160405BB / Intelligence Systems Development	
<p>FY 2021: Net increase of \$1.584 million due to an increase in Hostile Force Tagging Tracking and Locating (HF-TTL) due to adjustments for rapid prototyping and additional product development focused on Maritime TTL capabilities development (\$0.350 million); an increase in Integrated Survey Program (ISP) for continued rapid integration and user testing of emerging standards and technology (\$0.380 million); an increase in Special Operations Tactical Video System/ Reconnaissance, Surveillance, and Target Acquisition (TVS/RSTA) to support rapid prototyping and product improvement (\$0.431 million); an increase in Sensitive Site Exploitation to support technical evaluation of new technologies (\$0.423 million).</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>				Project (Number/Name) S400 / <i>SO Intelligence Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S400: <i>SO Intelligence Systems</i>	584.882	10.625	15.484	19.558	-	19.558	20.142	19.681	20.163	21.056	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This sub-project is part of the Military Intelligence Program (MIP). Provides for the identification, development, testing, and rapid prototyping of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. Sub-projects address the primary areas of intelligence dissemination, sensor systems, tagging, tracking, and locating devices, integrated threat warning to SOF mission platforms, and SOF-unique support from space systems, including Tactical Exploitation of National System Capabilities (TENCAP). The systems developed and tested in this line item are National Systems Support to SOF (NSSS); Joint Threat Warning System (JTWS); Hostile Forces - Tagging, Tracking, and Locating (HF-TTL); Special Operations Tactical Video System/ Reconnaissance, Surveillance, and Target Acquisition (TVS/RSTA); Special Operations Forces Planning, Rehearsal and Execution Preparation (SOFPREP); Integrated Survey Program (ISP); and Sensitive Site Exploitation (SSE).

U.S. Special Operations Command (USSOCOM) has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities throughout the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture employ the latest standards and technology by transitioning from separate systems to full integration with the Global Information Grid (GIG). The GIG allows SOF elements to operate with any force combination in multiple environments. The intelligence programs funded in this project will meet annual emergent requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: NSSS	0.849	0.862	0.879	-	0.879
Description: This program provides research and development, and rapid prototyping to support HQ SOCOM TENCAP program and supporting capabilities. NSSS improves the combat effectiveness of USSOCOM, its components, and the Theater Special Operations Commands (TSOC) by providing innovative space-based intelligence, surveillance, and reconnaissance technologies and system enhancements, products, and special communications capabilities to tactical SOF units. NSSS leverages current and developmental National systems to integrate with, augment, and support SOCOM systems. Focus areas include Geospatial Intelligence (GEOINT), Signals Intelligence (SIGINT), Special Communications, and intelligence fusion, reporting, and dissemination. NSSS efforts are characterized by rapid prototype development to transition to SOCOM Programs of Record. These developmental efforts support SOCOM's existing MIPs. NSSS will also improve SIGINT capabilities by pursuing Joint Interface Control Document 4.x and follow-on compliant SIGINT capabilities, extending SOCOM's cross-domain security infrastructure by adding unclassified sensors into					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development		Project (Number/Name) S400 / SO Intelligence Systems		
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
theater net-centric geo-location architecture, improving detection of Low-Probability of Intercept/Low Probability of Detection (LPI-LPD) signals, and automating radar characterizations that enhance tactical SOF capabilities to find, fix, monitor, and target assets using National Technical Means in support of tactical operators.						
FY 2020 Plans: Continue development of SOF-required prototype capabilities, primarily through leveraging current or developing technologies and assets in the Intelligent Community (IC), while coordinating with SOCOM and IC Programs of Record for production and operational fielding of successful capabilities. Emphasis areas include Intelligence, Surveillance, and Reconnaissance (ISR) support for Tagging, Tracking, and higher-accuracy geo-locating of hostile and friendly forces, especially in low sensor density environments, and providing timely intelligence to deployed forces.						
FY 2021 Base Plans: Continues development of SOF-required prototype capabilities, primarily through leveraging current or developing technologies and assets in the IC, while coordinating with SOCOM and IC Programs of Record for production and operational fielding of successful capabilities. Emphasis areas include ISR support for Tagging, Tracking, and higher-accuracy geo-locating of hostile and friendly forces, especially in low sensor density environments, and providing timely intelligence to deployed forces.						
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.017 million to accelerate rapid prototyping of tactical capabilities for SOF through the TENCAP program.						
Title: JTWS		4.782	11.945	14.400	-	14.400
Description: The JTWS System of Systems (SoS) enables the SOF Cryptologic Operator to collect, process, locate and exploit threat communications signals of interest in order to provide timely, relevant, and responsive intelligence, cross-cueing, enhanced target acquisition, and threat avoidance information directly to the SOF Commanders. Intelligence gathered is then transposed to National Databases. The JTWS SoS is assembled in four variants: Ground SIGINT Kit; Maritime; Air; and Unmanned Aerial Systems (UAS). Each variant has additional requirements for Communications Intelligence, Electronic Intelligence, and Precision Geo-location.						
FY 2020 Plans: Continue interoperability and modularity efforts of technologies. Continue technical development and integration of evolving technologies for all variants, in order to enhance capabilities and prosecute emerging threats.						

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development		Project (Number/Name) S400 / SO Intelligence Systems		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue development of an Electronic Intelligence (ELINT) prototype capability for the Maritime systems. Continue modular/scalable, open architecture, Development and Testing (D&T). FY 2021 Base Plans: Continues modular/scalable, open architecture, D&T, and software defined solutions. Continue modularity efforts of technologies. Begin software defined, cyber hardened development, and integration efforts. Begin technical evaluation of machine learning and human language technologies for all variants in order to reduce human burden. Begin improvement of technology for Near Peer signals of systems. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$2.455 million due to increased funding requirement to integrate and test space payload and for Maritime SIGINT Capability.						
Title: HF-TTL Description: This program provides SOF with the necessary tools to find, fix, and finish target assets through the emplacement of sophisticated tags and devices that feed into an integrated architecture. HF-TTL provides Global Combatant Commanders (GCC) and SOF operators with an immediate capability to tag, track, and locate people, things, and activities. The HF-TTL program provides actionable intelligence for SOF mission planners. The mission sets comprise a mix of different classes of tags and their associated detection, interrogation, viewing, tracking, and communications systems that are fielded annually to SOF Components and TSOC based upon dynamic and emergent SOF operational requirements. FY 2020 Plans: Continue rapid prototyping, specialized device modifications, product development support, integration and operational testing and evaluation in support of UAS payload integration, maritime specialized tags development, and LPI-LPD waveform refinements. FY 2021 Base Plans: Continues rapid prototyping, specialized device modifications, product development support, integration and operational testing and evaluation in support of UAS payload integration, maritime specialized tags development, and LPI-LPD waveform refinements. FY 2020 to FY 2021 Increase/Decrease Statement:		0.709	1.078	1.440	-	1.440

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020	
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development		Project (Number/Name) S400 / SO Intelligence Systems	
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Increase of \$0.362 million due to adjustments for rapid prototyping and additional product development focused on maritime TTL capabilities development.					
Title: TVS/RSTA					
Description: This program provides SOF with critical Special Reconnaissance (SR) equipment that directly supports the planning and execution of SOF missions. This capability allows the SOF warfighter to meet SOF SR mission requirements to find, fix, finish, exploit, analyze, and disseminate information of an adversary’s movement, construct, identification, location, and associated activities. TVS/RSTA provides GCC and SOF operators with an immediate capability to visually and electronically acquire people, things, and activities and provides actionable intelligence for SOF planners and Commanders. The program Family of Systems (FoS) consists of interoperable equipment to capture and transfer near-real-time ground-based, tactical day/night/ reduced visibility, imagery, video, and electronic proximity and movement sensing, all capable of dissemination through SOF organic, global C4I, and commercial communications infrastructures.					
FY 2020 Plans: Continue specialized device modifications, integration and operational testing and evaluation.					
FY 2021 Base Plans: Continues specialized device modifications, integration and operational testing and evaluation.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.418 million for rapid prototyping and product improvement.					
Title: SOFPREP					
Description: This program serves as the intelligence focal point for production of SOF enhanced GEOINT (maps, imagery, and terrain data) and 3D scene visualization databases. SOFPREP gathers, processes, exploits, disseminates, and manages classified high resolution 3D databases and GEOINT data in support of SOF training, mission rehearsal, and execution preparation systems. The program builds the SOF common geospatial environment and manages the authoritative database of SOF-specific GEOINT terrain data. SOFPREP is a National Geospatial-Intelligence Agency (NGA) certified co-producer in support of time-sensitive SOF specific requirements.					
FY 2020 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020			
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development	Project (Number/Name) S400 / SO Intelligence Systems				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue testing and evaluation of operational prototype systems to speed production of correlated high resolution 3D geospatial databases. FY 2021 Base Plans: Continues testing and evaluation of operational prototype systems to speed production of correlated high resolution 3D geospatial databases. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.007 million will support continued user test and evaluation.						
Title: ISP Description: This program collects and produces current, detailed, tactical planning data to support military operations to counter threats against U.S. citizens, interests, and property located both domestically and overseas. ISP products are specifically tailored packages that provide operational information, as well as intelligence data for use by DOD and the U.S. Department of State to support operational planners for counter-terrorism operations, evacuations, and other rescue missions. FY 2020 Plans: Continue development and rapid fielding of ISP system and products to integrate with enterprise architecture and support the latest standards and technology. FY 2021 Base Plans: Continues development and rapid fielding of ISP system and products to integrate with enterprise architecture and support the latest standards and technology. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.389 million will continue rapid integration and user testing of emerging standards and technology.		0.409	0.415	0.804	-	0.804
Title: SSE Description: This program uses rapid test and evaluation of emerging Biometric and Forensic technology to provide state-of-the-art capabilities to the warfighter for the exploitation of documents, electronic data, materiel, and forensic evidence on sensitive sites/objectives. Biometric kits collect and transmit unique, measurable biometric signatures from personnel, including live/latent fingerprints, iris patterns, and facial features. It also provides a means to verify against and enroll subjects into the DOD authoritative database, and to query that database to support hold or release decisions. Forensic kits enable on-objective linking of events to specific persons through chemical analysis, latent fingerprints, cell phones and computer data analysis, and		0.186	0.188	0.614	-	0.614

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020				
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development				Project (Number/Name) S400 / SO Intelligence Systems				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
deoxyribonucleic acid collection. Exploitation Analysis Centers provide theater-level mobile forensic capabilities for more in-depth exploitation of collected exploitable material.												
FY 2020 Plans: Continue technical evaluation of new technologies.												
FY 2021 Base Plans: Continues technical evaluation of new technologies with an increase of test events.												
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.426 million to continue technical evaluation of new technologies and increase of test events.												
Accomplishments/Planned Programs Subtotals								10.625	15.484	19.558	-	19.558
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• PROC/020400INTL: Intelligence Systems	105.922	117.141	94.982	16.247	111.229	133.077	138.603	141.311	145.572	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
• NSSS introduces and integrates national systems capabilities into the SOF force structure and operations. This is accomplished by partnering with existing IC and SOCOM programs of record to incorporate SOF mission requirements into current and developing technologies and assets. This leveraging of funds increases national and commercial systems awareness, demonstrates the tactical utility of national systems and commercial data, test technologies and evaluates operational concepts in biennial Joint Staff Special Projects, and allows for the transition of promising concepts and technologies to other SOF program offices for execution.												
• JTWS is a SoS leveraging Commercial Off The Shelf (COTS)/Government Off The Shelf, as well as partnerships with other government agencies. The Program of Record (POR) will leverage capabilities requiring minimal modifications wherever possible. JTWS is making deliberate investments to evolve the program into modular/ scalable systems with a framework supporting open architecture, software database and cyber hardened solutions. JTWS will address the continuously evolving Great Power Competition environments on the Ground, Air, Maritime, Unmanned Aerial System variants, leverage existing partnerships with other government agencies in order to integrate and sustain next generation need, from the Joint Components and as emerging threats require technology modernizations. The contracting strategy is a mixture of full and open competition for prime integrators, broad area announcements, and existing Indefinite Delivery/Indefinite Quantity (IDIQ) contracts.												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>	Project (Number/Name) S400 / <i>SO Intelligence Systems</i>
<ul style="list-style-type: none"> • HF-TTL utilizes an evolutionary acquisition strategy to provide highly sophisticated TTL and close target audio/video devices capable of operating in various environments as needed to meet SOF operational requirements. Commercial and government agency sources will be leveraged for required certifications, device level modifications, integration, functional, and operational testing and evaluations. • TVS/RSTA employs an evolutionary strategy to incorporate the latest state of technology within its product line to provide upgraded next-generation technology insertion of COTS systems and address the changing threat environment to meet SOF reconnaissance and surveillance mission requirements. Commercial and government agency sources will be leveraged for required certifications, system level integration, functional, and operational testing and evaluations. • SOFPREP employs an evolutionary strategy to insert emerging technologies for processing, exploitation and dissemination capabilities tailored to SOF user-defined mission requirements. Commercial and government agency sources are leveraged for required certifications, system level integration, functional, and operational testing and evaluations. • ISP employs an evolutionary strategy to insert emerging technologies for collection, processing, exploitation and dissemination capabilities tailored to SOF user-defined mission requirements. Commercial and government agency sources are leveraged for required certifications, system level integration, functional, and operational testing and evaluations. • SSE uses a rapid acquisition strategy to provide next-generation technologies for collection, processing, exploitation and dissemination capabilities supporting SOF exploitation mission requirements. Commercial and government agency sources are leveraged for required certifications, system level integration, functional, and operational testing and evaluations. 		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>				Project (Number/Name) S400 / <i>SO Intelligence Systems</i>					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
National Systems Support to SOF (NSSS)	MIPR	Various : Various	18.205	0.849	Feb 2019	0.862	Feb 2020	0.879	Feb 2021	-		0.879	Continuing	Continuing	-
Joint Threat Warning System (JTWS) - All Variants (Air, Ground, Maritime, and Unmanned)	MIPR	Various : Various	42.765	1.872	Dec 2018	7.485	Jan 2020	8.800	Feb 2021	-		8.800	Continuing	Continuing	-
Integrated Survey Program (ISP) - Development, Test and Evaluation	C/FFP	Various : Various	0.914	0.409	Jan 2019	0.415	Jan 2020	0.804	Jan 2021	-		0.804	Continuing	Continuing	-
Hostile Forces-Tagging Tracking, and Locating (HF-TTL)	C/CPFF	Various : Various	2.328	0.709	Feb 2019	0.854	Feb 2020	1.152	Feb 2021	-		1.152	Continuing	Continuing	-
Tactical Video System/ Reconnaissance, Surveillance, & Target Acquisition (TVS/RSTA)	MIPR	Various : Various	-	0.564	Feb 2019	0.491	Jan 2020	0.851	Jan 2021	-		0.851	Continuing	Continuing	-
Special Operations Forces Planning, Rehearsal & Execution Preparation (SOPREP) - Rapid Prototyping	C/Various	Various : Various	-	1.868	Feb 2019	-		-		-		-	0.000	1.868	-
Prior Year Funding - Completed Efforts	Various	Various : Various	461.047	-		-		-		-		-	0.000	461.047	-
Subtotal			525.259	6.271		10.107		12.486		-		12.486	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JTWS Modular/Space Payloads	C/CPFF	Various : Various	3.104	2.360	Jan 2019	4.160	Jun 2020	4.800	May 2021	-		4.800	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	8.296	-		-		-		-		-	0.000	8.296	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>						Project (Number/Name) S400 / <i>SO Intelligence Systems</i>			
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			11.400	2.360		4.160		4.800		-		4.800	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JTWS Integration/Test/ Test Support	Various	Various : Various	7.842	0.550	Mar 2019	0.300	May 2020	0.800	Nov 2020	-		0.800	Continuing	Continuing	-
TVS/RSTA - User Assessments	MIPR	ATEC : FT Huachuca, AZ	1.708	-		0.225	Jan 2020	0.283	Jan 2021	-		0.283	Continuing	Continuing	-
HF-TTL	MIPR	ATEC : FT Huachuca, AZ	0.499	-		0.224	May 2020	0.288	May 2021	-		0.288	Continuing	Continuing	-
Sensitive Site Exploitation	MIPR	Various : Various	0.338	0.186	Dec 2018	0.188	Dec 2019	0.614	Dec 2020	-		0.614	Continuing	Continuing	-
SOFPREP - Prototype Systems	C/FFP	Various : Various	0.855	1.258	Jan 2019	0.280	Mar 2020	0.287	Mar 2021	-		0.287	Continuing	Continuing	-
Prior Year Funding - Completed Efforts	Various	Various : Various	0.549	-		-		-		-		-	0.000	0.549	-
Subtotal			11.791	1.994		1.217		2.272		-		2.272	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Funding - Completed Efforts	Various	Various : Various	36.432	-		-		-		-		-	0.000	36.432	-
Subtotal			36.432	-		-		-		-		-	0.000	36.432	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			584.882	10.625		15.484		19.558		-		19.558	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command							Date: February 2020		
Appropriation/Budget Activity 0400 / 7			R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>			Project (Number/Name) S400 / <i>SO Intelligence Systems</i>			
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks									

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

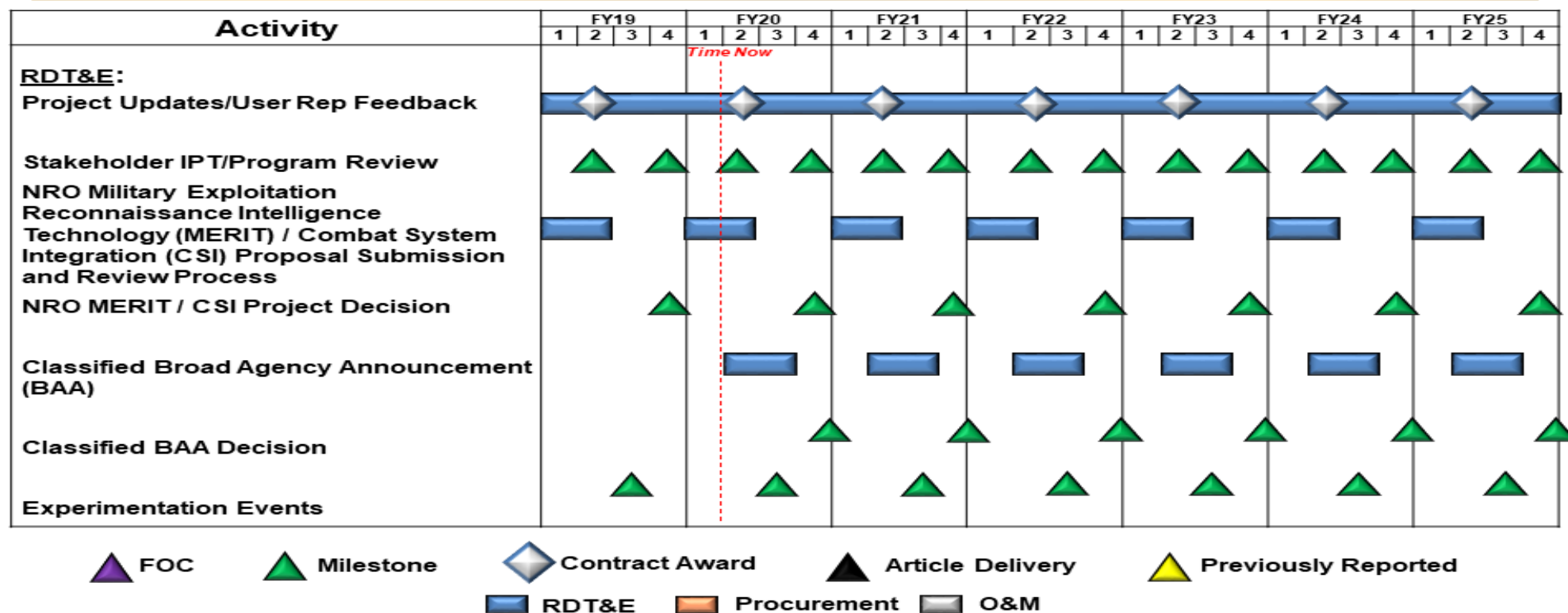
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160405BB / Intelligence Systems
Development

Project (Number/Name)
S400 / SO Intelligence Systems

National System Support To SOF (NSSS)/Tactical Exploitation of National System Capabilities(TENCAP) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

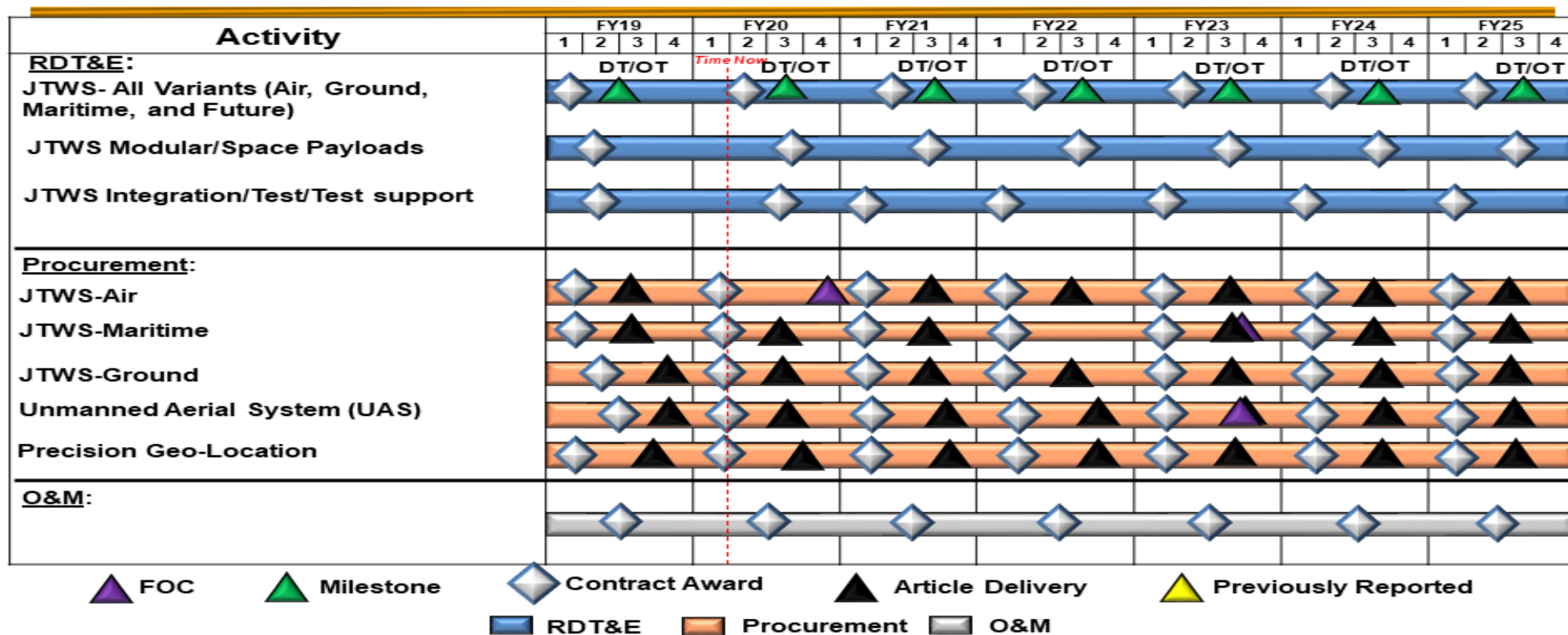
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160405BB / Intelligence Systems
Development

Project (Number/Name)
S400 / SO Intelligence Systems

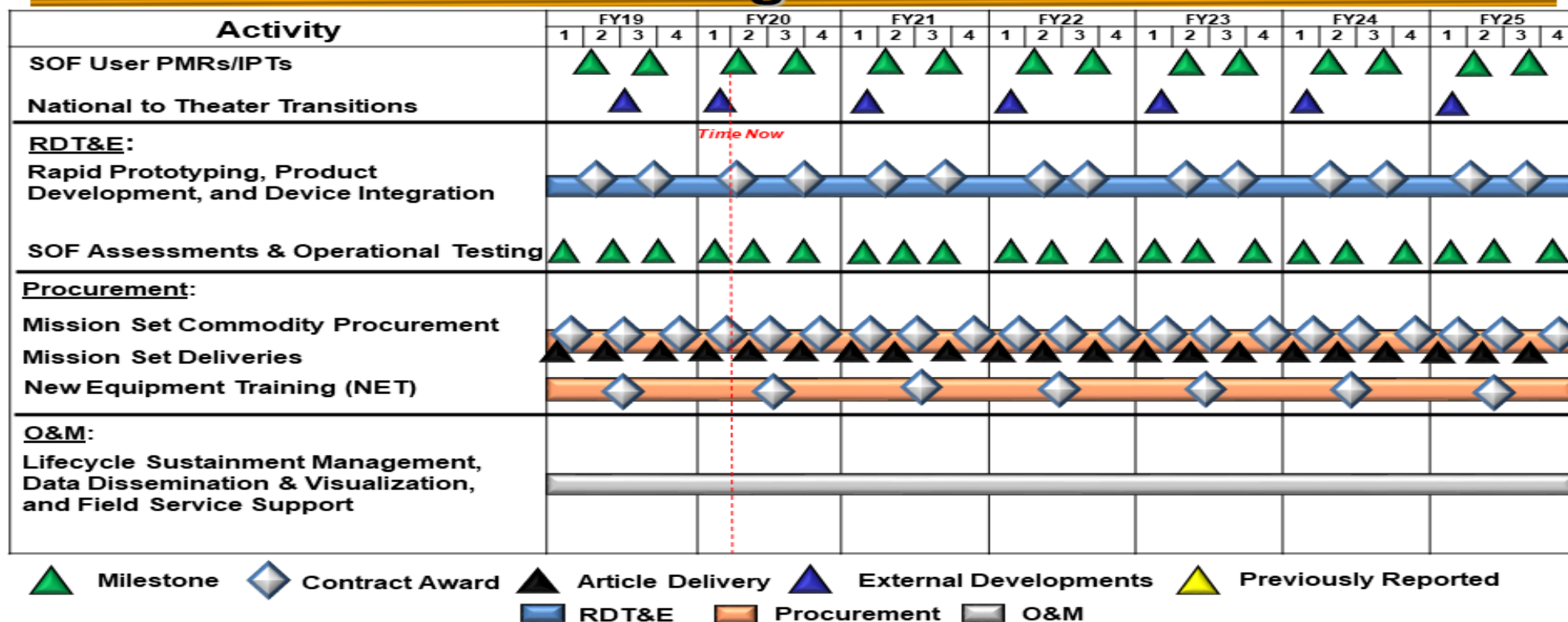
Joint Threat Warning System (JTWS) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development	Project (Number/Name) S400 / SO Intelligence Systems	

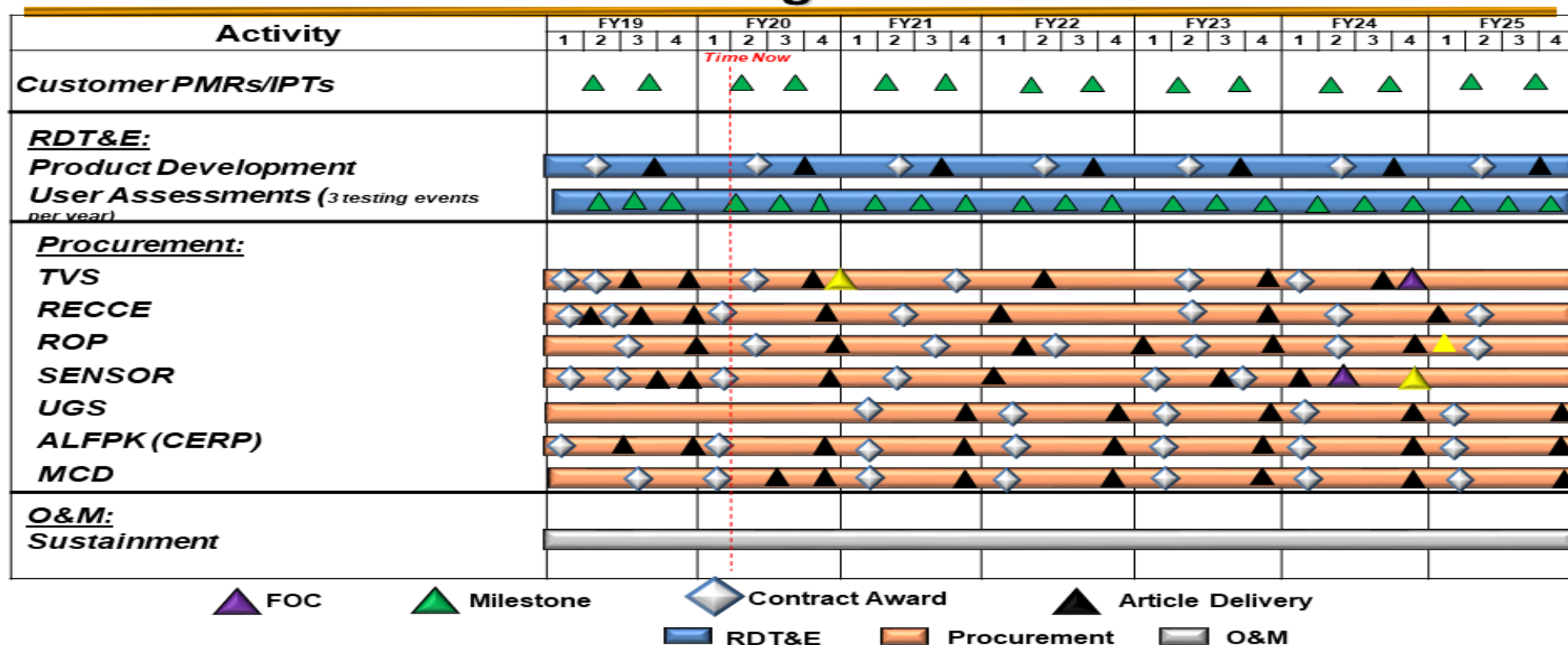
Hostile Forces – Tagging, Tracking, and Locating (HF-TTL) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development	Project (Number/Name) S400 / SO Intelligence Systems	

Tactical Video System/Reconnaissance, Surveillance, and Target Acquisition (TVS/RSTA) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

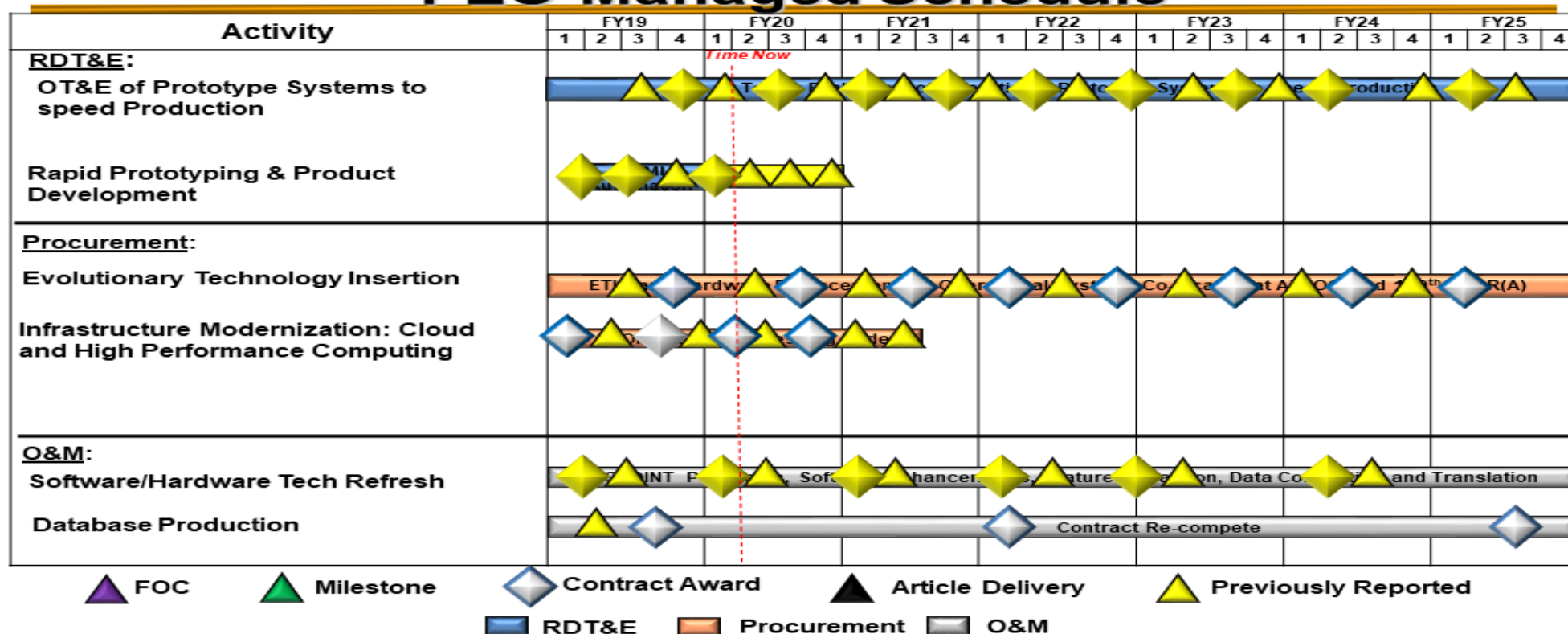
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160405BB / Intelligence Systems
Development

Project (Number/Name)
S400 / SO Intelligence Systems

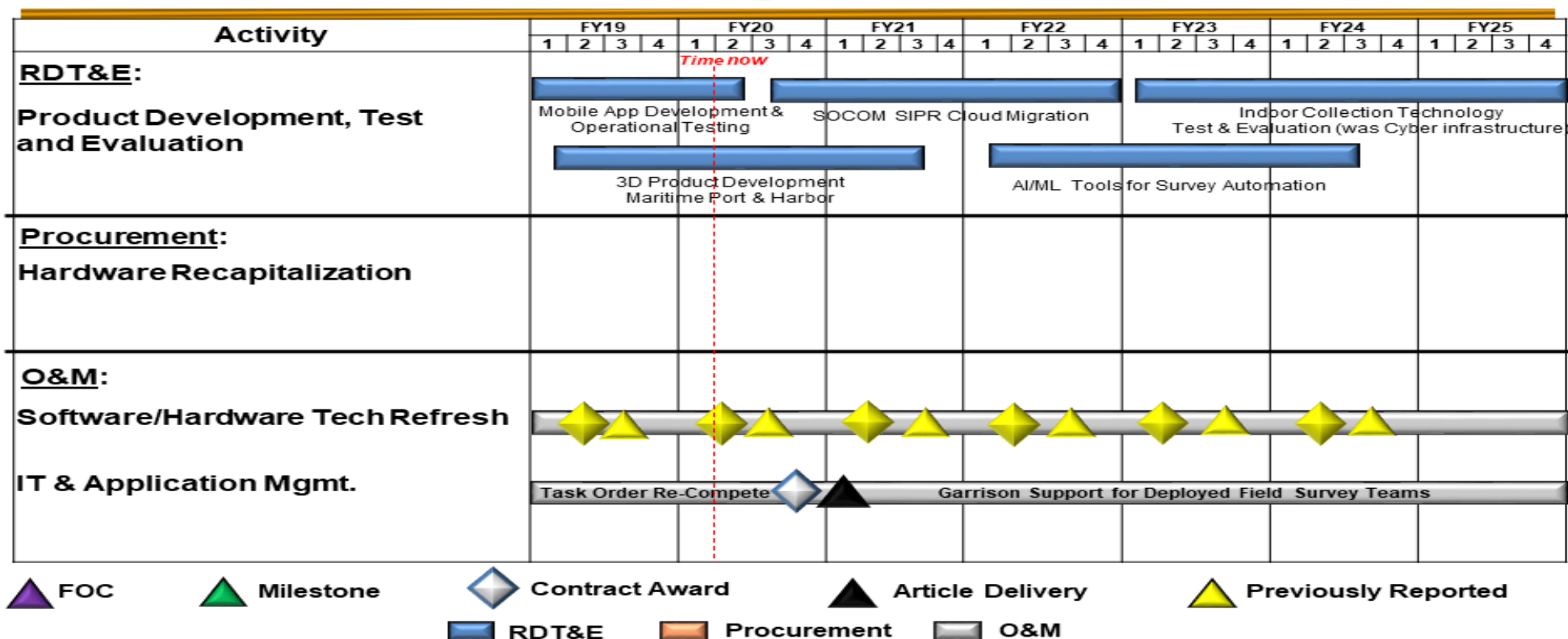
SOF Planning, Rehearsal and Execution Preparation (SOFPREP) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development	Project (Number/Name) S400 / SO Intelligence Systems	

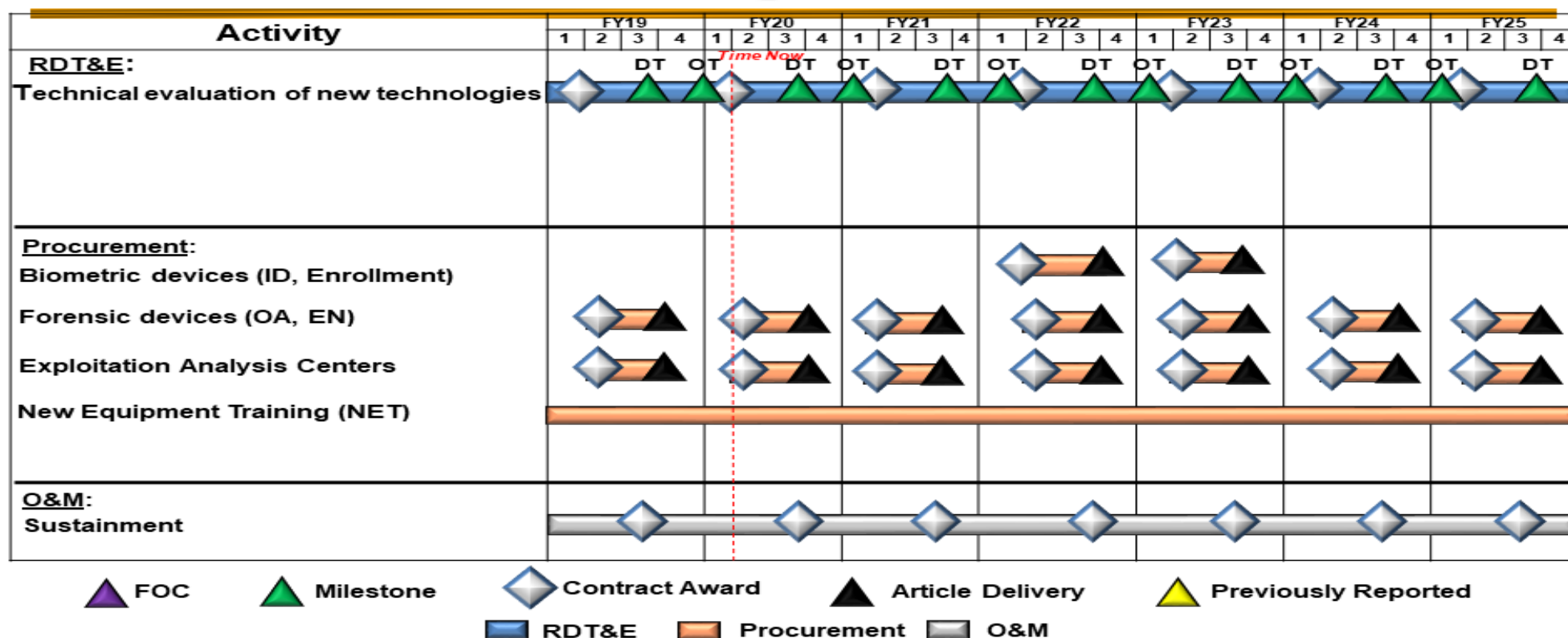
Integrated Survey Program (ISP) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development	Project (Number/Name) S400 / SO Intelligence Systems	

Sensitive Site Exploitation (SSE) PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160405BB / <i>Intelligence Systems Development</i>	Project (Number/Name) S400 / <i>SO Intelligence Systems</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>National Systems Support to SOF (NSSS) Participation in Space Technology Development and Integration</i>				
Project Updates/User Rep Feedback	1	2019	4	2025
NRO MERIT/Combat System Integration (CSI) Proposal Submission and Review Process	1	2019	2	2025
Classified Broad Agency Announcement (BAA)	2	2020	3	2025
<i>Joint Threat Warning System (JTWS)</i>				
JTWS- All Variants (Air, Ground, Maritime, and Unmanned)	1	2019	4	2025
JTWS Modular/Space Payloads	1	2019	4	2025
JTWS Integration/Test/Test support	1	2019	4	2025
<i>Hostile Forces - Tagging, Tracking, and Locating (HF-TTL)</i>				
Rapid Prototyping, Product Development, and Device Integration	1	2019	4	2025
SOF Assessments and Operational Testing	1	2019	4	2025
<i>Special Operations Tactical Video System (SOTVS)</i>				
Product Development	1	2019	4	2025
User Assessments	1	2019	4	2025
<i>Special Operations Forces Planning, Rehearsal & Execution Preparation (SOFPREP)</i>				
Operational Test and Evaluation of Prototype Systems to speed production	1	2019	4	2025
Rapid Prototyping and Product Development	1	2019	4	2019
<i>Integrated Survey Program (ISP)</i>				
Product Development, Test and Evaluation	1	2019	4	2025
<i>Sensitive Site Exploitation (SSE)</i>				

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command					Date: February 2020	
Appropriation/Budget Activity 0400 / 7			R-1 Program Element (Number/Name) PE 1160405BB / Intelligence Systems Development		Project (Number/Name) S400 / SO Intelligence Systems	
			Start		End	
Events by Sub Project			Quarter	Year	Quarter	Year
Technical evaluation of new technologies			1	2019	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	PE 1160408BB / <i>Operational Enhancements</i>											
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	1,442.375	98.395	160.648	136.041	1.186	137.227	137.609	121.206	118.222	120.615	Continuing	Continuing
S500A: <i>Operational Enhancements</i>	1,442.375	98.395	160.648	136.041	1.186	137.227	137.609	121.206	118.222	120.615	Continuing	Continuing

A. Mission Description and Budget Item Justification

Details are provided under separate cover.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	102.939	167.648	157.271	-	157.271
Current President's Budget	98.395	160.648	136.041	1.186	137.227
Total Adjustments	-4.544	-7.000	-21.230	1.186	-20.044
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.990	-			
• SBIR/STTR Transfer	-3.554	-			
• Other Adjustments	-	-	-21.230	1.186	-20.044

Change Summary Explanation

Funding:

FY2019: Net decrease of \$4.544 million is due to transfer of funds to Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) programs (-\$3.554 million) and a decrease was made available to support critical emerging Command requirements during the year of execution (-\$0.990 million).

FY2020: Net decrease of -\$7.000 million details provided under separate cover.

FY2021: Net decrease of -\$20.044 million was due to an increase with details provided under separate cover (\$1.028 million) and transfer from base (-\$1.186 million) to Overseas Contingency Operations (OCO) (\$1.186 million) for Enduring Requirements.

For the Defense Wide Review (DWR), USSOCOM performed a comprehensive analysis of capabilities and is streamlining the Operational Enhancements program (details provided under separate cover) to better align with the Department's priorities as outlined in the National Defense Strategy (-\$21.072 million).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7:</i> <i>Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160408BB / <i>Operational Enhancements</i>	
<div style="margin-bottom: 20px;">Schedule: None.</div> <div>Technical: None.</div>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	208.650	74.250	81.514	59.511	5.796	65.307	55.509	60.550	61.786	62.891	Continuing	Continuing
D476: <i>Military Information Support Operations</i>	42.130	10.693	5.750	5.459	-	5.459	3.204	3.282	3.363	3.473	Continuing	Continuing
S375: <i>Weapons Systems</i>	4.829	1.212	1.625	1.604	-	1.604	1.529	1.561	1.597	1.629	Continuing	Continuing
S385: <i>Soldier Protection and Survival Systems</i>	19.633	11.342	13.947	4.816	5.796	10.612	12.527	13.119	13.225	13.317	Continuing	Continuing
S385A: <i>Body Armor and Associated Equipment</i>	7.572	1.006	1.752	1.738	-	1.738	1.694	1.729	1.770	1.805	Continuing	Continuing
S395: <i>Visual Augmentation, Lasers and Sensor Systems</i>	12.323	1.054	3.212	2.171	-	2.171	2.097	2.132	2.174	2.218	Continuing	Continuing
S700: <i>Communications Equipment and Electronics Systems</i>	30.937	13.340	17.359	26.435	-	26.435	21.709	21.250	21.720	22.154	Continuing	Continuing
S710: <i>Tactical Systems Development</i>	3.700	4.073	2.813	3.344	-	3.344	3.103	3.169	3.242	3.305	Continuing	Continuing
S725: <i>Tactical Radio Systems</i>	26.008	4.479	11.315	7.940	-	7.940	2.570	2.631	2.699	2.753	Continuing	Continuing
S800: <i>Munitions Advanced Development</i>	61.518	27.051	23.741	6.004	-	6.004	7.076	11.677	11.996	12.237	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for development, rapid prototyping, testing, and integration of specialized equipment in the areas of automation, communication, radio, weapon, soldier protection and survival, visual augmentation, lasers and sensors, munition and Military Information Support Operations (MISO) systems. Warrior Systems specialized equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. Special Operation Forces (SOF) must infiltrate by land, sea, and air to conduct unconventional warfare, direct action, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success. The efforts within this Program Element (PE) improve SOF warfighting capabilities by continuing efforts to develop smaller, lighter, more efficient and more robust capabilities. The SOF mission mandates that SOF systems remain technologically superior to any threat to provide a maximum degree of survivability while, generally, being conducted in harsh environments for unspecified periods and in locations requiring small unit autonomy. Communications efforts will maintain a Command, Control, and Communications (C3) link between SOF Commanders and SOF Teams, and provide interoperability with all Services, various agencies of the U.S. Government, Air Traffic Control, commercial agencies and allied foreign forces. Efforts relating to soldier

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>
<p>protection and survival requirements will improve survivability and mobility of SOF while conducting varied missions. Counter Unmanned Aerial Systems (C-UAS) efforts rely on cutting edge detection sensors, both passive and active, paired with kinetic and non-kinetic defeat systems will allow SOF Operators to conduct Special Forces missions in denied and hostile environments worldwide. Specialized visual augmentation, lasers and sensors will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. Munition efforts include advanced engineering operational system development and qualification efforts related to SOF-peculiar munitions and equipment. Precision Strike Systems (PSS) will develop a SOF organic strike mission package to surgically strike an agile and mobile enemy, protect own forces, and minimize collateral damage. Additionally, MISO efforts include planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately, the behavior of foreign governments, organizations, groups and individuals. These technologies will be pursued via rapid prototyping efforts when appropriate. This R-1 PE received Overseas Contingency Operations (OCO) funding in FY 2019 and FY 2020. FY 2021 funding includes OCO funding for Enduring Requirements (\$5.796 million).</p> <p>MISO: This project provides for the development, test and integration of MISO equipment. MISO are planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately, the behavior of foreign governments, organizations, groups, and individuals. This project funds transformational systems and equipment to conduct the seven phase MISO process (planning, targeting audience analysis, series development, product development and design, approval, production/distribution/dissemination, and measures of effectiveness) in support of combatant commanders.</p> <p>Weapons Systems: This project provides for next generation system development and Pre-Planned Product Improvements (P3I), testing, and integration of specialized weapon systems and weapon accessories to meet the unique requirements of SOF. Efforts include muzzle brakes and suppressors, and P3I for assault, sniper, and crew served weapons leveraging the latest technological advances to achieve overmatch capability against emerging threats.</p> <p>Soldier Protection and Survival Systems: This project funds development, testing, integration, rapid prototyping and evaluation of specialized equipment to meet the unique soldier protection and survival requirements of Special Operations Forces (SOF), to include, but not limited to, individual survival equipment, hearing protection, clothing systems, load bearing equipment, Counter Radio Controlled Improvised Explosive Device (RC-IED) systems, Counter Unmanned Systems (aerial, ground and maritime), and personnel safety equipment to improve the mobility of SOF, while conducting varied missions. These missions are generally conducted in harsh and hostile environments, for unspecified periods and in locations requiring small unit autonomy.</p> <p>Body Armor and Associated Equipment: This project provides specialized equipment with ballistic protection to meet the unique soldier protection and survival requirements of SOF. Specialized ballistic equipment improves survivability and load bearing equipment impacting the mobility of SOF while conducting varied missions. This project enhances the SOF Personal Equipment Advanced Requirements program by providing for the research, development, and testing of body armor plates, soft armor, helmets, eye protection, and other personal protective equipment to meet current ballistic threats that exist on the battlefield.</p> <p>Visual Augmentation, Lasers and Sensor Systems:</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	
<p>This project provides for development, testing, and integration of specialized visual augmentation, laser and sensor systems equipment to meet the unique requirements of SOF and facilitate future Hyper-Enabled Operator capabilities. Programs in this area include binocular/monocular devices; next generation laser designation and geo-location systems; weapon aiming lasers, scopes and accessories; and training and simulation systems.</p> <p>Communications Equipment and Electronics Systems: This project provides for communication systems to meet emergent requirements to support SOF. SOF units require communications equipment that improves their warfighting capability without degrading their mobility. SOF Communications Equipment and Electronics is a continuing effort to develop smaller, lighter, more efficient and more robust SOF Command, Control, Communications, and Computer (C4) capabilities.</p> <p>Tactical Systems Development: This project provides for development, testing, and integration of specialized automation equipment to meet the unique requirements of SOF. Tactical systems provide forward deployed forces with advanced networking, automated data processing, storage, and display capabilities to support situational awareness, mission planning and execution, and Command and Control (C2) of forces.</p> <p>Tactical Radio Systems: This project is for the development of all SOF tactical radio programs. SOF units require radio communication equipment that improves their warfighting capability without degrading their mobility. United States Special Operations Command (USSOCOM) has developed an overall strategy to ensure that Tactical Radio Systems continue to provide SOF with the required capabilities throughout the 21st century. SOF Tactical Radios provide the critical C3 link between SOF Commanders and SOF Teams involved in operational missions and training exercises. They also provide interoperability with all Services, various agencies of the U.S. Government, Air Traffic Control, commercial agencies, and allied/coalition forces. Tactical Radios rapidly and seamlessly establish and maintain mobile and fixed C2 communications between infiltrated/operational elements and higher echelon headquarters, allowing SOF to operate with any force combination in multiple environments.</p> <p>Munitions Advanced Development: This project provides for the advanced engineering, operational system development, and qualification efforts related to SOF-peculiar and Foreign/Non-standard munitions and equipment. Funding supports development of Insensitive Munitions (IM) technology and evaluation, in accordance with statutory requirement set forth in U.S. Code, Title 10, Chapter 141, Section 2389 (December 2001). Testing is in accordance with the USSOCOM IM Strategic Plan. Funding also supports efforts to develop and improve Precision Strike Systems (PSS) and Stand-Off Precision Guided Munitions (SOPGM), including the development and integration of improved warheads, seekers, guidance navigation and control systems, operational flight software, and missile delivery on to SOF platforms. When appropriate, these technologies will be pursued via rapid prototyping to develop, demonstrate and evaluate residual operational capabilities.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command				Date: February 2020	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development		PE 1160431BB / Warrior Systems			
B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	74.582	68.332	55.337	0.000	55.337
Current President's Budget	74.250	81.514	59.511	5.796	65.307
Total Adjustments	-0.332	13.182	4.174	5.796	9.970
• Congressional General Reductions	-	-3.818			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	17.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.942	-			
• SBIR/STTR Transfer	-2.274	-			
• Other Adjustments	-	-	4.174	5.796	9.970
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: D476: Military Information Support Operations				FY 2019	FY 2020
Congressional Add: Next Generation Loud Speakers (NGLS)				5.760	4.000
Congressional Add Subtotals for Project: D476				5.760	4.000
Project: S385: Soldier Protection and Survival Systems					
Congressional Add: Rotary Wing Aviation Helmet				1.500	-
Congressional Add Subtotals for Project: S385				1.500	-
Project: S800: Munitions Advanced Development					
Congressional Add: SOPGM				13.928	13.000
Congressional Add Subtotals for Project: S800				13.928	13.000
Congressional Add Totals for all Projects				21.188	17.000
Change Summary Explanation					
Funding:					
FY 2019: Net decrease of \$0.332 million is due to a transfer to Small Business Innovative Research/Small Business Technology Transfer programs (-\$2.274 million); an increase in MMP to cover additional requirements related to Advanced Sniper Rifle development (\$1.137 million); an increase for continued RC-IED					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>
<p>systems engineering, test and evaluation (\$0.990 million); and funding was made available to support critical emerging Command requirements during the year of execution (-\$0.185 million).</p> <p>FY 2020: Net increase of \$13.182 million is due to Congressional Add program increases for distribute audio media and next generation loudspeakers (\$4.000 million), Small Glide Munition (SGM) unmanned aerial system integration (\$3.000 million), SGM collaborative strike environment (\$10.000 million) and Congressional General Reduction for prior year carryover (-\$3.818 million).</p> <p>FY 2021: Net increase of \$9.970 million due to an increase for the initiation of developmental, test and evaluation of new Media Production Center (MPC) (\$2.694 million), begin the engineering and integration for the munitions guidance and control upgrades for Stand-Off Precision Guided Munitions (SOPGM) (\$3.155 million), rapid development of a modular open systems architecture to provide Mission Command Common Operational Picture (MC/COP) (\$4.583 million), and funding was made available to support critical emerging command requirements (-\$0.180 million). Funding transfer from (-\$5.796 million) base to OCO for Enduring Requirements (\$5.796 million).</p> <p>For the Defense Wide Review (DWR), USSOCOM performed a comprehensive analysis of future capabilities and is streamlining the RC-CIED, Counter Unmanned Aerial Systems (C-UAS), and Munitions Advanced Development project contract support efforts to better align with the Department's priorities as outlined in the National Defense Strategy (-\$0.282 million).</p> <p>-\$0.058 million - RC-CIED - reduces system engineering and test and evaluation efforts.</p> <p>-\$0.204 million - C-UAS - reduces development and test of various capabilities.</p> <p>-\$0.020 million - Munitions Advanced Development - reduces IM testing on various munitions.</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) D476 / Military Information Support Operations			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
D476: Military Information Support Operations	42.130	10.693	5.750	5.459	-	5.459	3.204	3.282	3.363	3.473	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development and acquisition of Military Information Support Operations (MISO) equipment. MISO are planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately, the behavior of foreign governments, organizations, groups, and individuals. This project funds transformational systems and equipment to conduct MISO in support of combatant commanders.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Multi-Mission Payload (MMP) formerly known as Long Range Broadcast System (LRBS)	3.232	-	1.178	-	1.178
Description: The MMP is a family of broadcast systems intended to be integrated into multiple manned and unmanned, long-loiter aerial systems with the capability of broadcasting in Frequency Modulation (FM), Television (TV), Very High Frequency (VHF), TV Ultra High Frequency (UHF) and cellular Short Message Service (SMS), Multi-Media Messaging Service, and Voice. This system provides the capability to broadcast MISO messages via multiple mediums into permissive, semi-permissive, and denied foreign areas. Additionally, the MMP is capable of supporting Electronic Warfare (EW) missions.					
FY 2021 Base Plans: Completes MMP-Medium development, test, and evaluation and begins MMP-Light development..					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$1.178 million begins MMP-Light development.					
Title: Fly-Away Broadcast System (FABS)	0.874	0.888	0.708	-	0.708
Description: FABS is a transit case fly-away broadcast system that utilizes commercial & industry standard technology to disseminate approved messaging to target audiences via FM, SW, cellular SMS and TV transmitter.					
FY 2020 Plans: Continue testing and evaluation of new systems and components to enhance MISO broadcasts, to include development of Next					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020			
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) D476 / Military Information Support Operations				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Generation FABS (v4) for enhanced Next Generation Loud Speaker (NGLS) - Scatterable Media (SM) reprogram capability and Software Defined Radio (SDR) implementation to improve efficiencies and reduce Size, Weight and Power (SWAP). FY 2021 Base Plans: Continues testing and evaluation of new systems and components to enhance MISO broadcasts, to include development of Next Generation FABS (v4) to integrate key capabilities to enhance MISO Broadcasts for NGLS-SM and SDR implementation that improves efficiencies and reduces SWAP. Begins implementation of Tactical Assault Kit - Common Operating Picture enhancements. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.180 million due to re-baselining of funds to more accurately reflect acquisition strategy.						
Title: Next Generation Loud Speakers (NGLS) Description: NGLS are portable systems capable of disseminating high quality recorded and live audio messages by MISO forces in varied geographical area and climate conditions. NGLS consists of Dismounted and Mounted variants that are lighter, smaller, and louder than legacy speaker systems, with added clarity and durability. NGLS-SM is a hand-emplaced or air-delivered printed audio-visual device for disseminating delayed or on-cue messages to foreign target audiences. FY 2020 Plans: Continue testing, development, and evaluation of new systems and components to enhance MISO broadcasts. Focus on NGLS-SM, wireless end-user device, and configurable mission module to improve measures of effectiveness and measures of performance. FY 2021 Base Plans: Continues testing, development, and evaluation of new systems and components to enhance MISO broadcasts. Continues focus on NGLS-SM, wireless end-user device, and configurable mission module to improve measures of effectiveness and measures of performance. NGLS Tactical Assault Kit COP on schedule. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.017 million due to minor adjustments.		0.827	0.862	0.879	-	0.879
Title: Media Production Center (MPC)		-	-	2.694	-	2.694

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020	
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems			Project (Number/Name) D476 / Military Information Support Operations		

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Description: MPC is a set of independent but inter-related multi-media production, editing, and archiving capabilities providing MISO forces and other select organizations with options for imagery, audio, animation, and Audio/Video (AV) products of varying degrees of technical complexity and operational responsiveness.</p> <p>FY 2021 Base Plans: Initiates development, modifications, testing, and evaluation of existing and new systems. RDTE plans for the MPC Family of Systems (FoS) include three main efforts: Media Anti Forensics, Language Translation, and Deep Fakes.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$2.694 million due to start of development, modifications, testing, and evaluation of new MPC capabilities.</p>					
Accomplishments/Planned Programs Subtotals	4.933	1.750	5.459	-	5.459

	FY 2019	FY 2020
<p>Congressional Add: Next Generation Loud Speakers (NGLS)</p> <p>FY 2019 Accomplishments: Congressional add to continue development of distributable audio media and NGLS - Scatterable Media (SM).</p> <p>FY 2020 Plans: Congressional add continues development and begins test and evaluation of distributable audio media and NGLS - Scatterable Media (SM).</p>	5.760	4.000
Congressional Adds Subtotals	5.760	4.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC1/0204OTHER:	131.905	103.938	96.333	0.984	97.317	79.598	73.139	54.838	70.984	Continuing	Continuing
OTHER ITEMS <\$5M											
Remarks None.											

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) D476 / <i>Military Information Support Operations</i>
<p><u>D. Acquisition Strategy</u></p> <ul style="list-style-type: none">• The MMP program has a traditional acquisition development and procurement strategy with accelerated development that includes increased flight test and multiple combat evaluations.• The FABS program has an evolutionary acquisition strategy. Commercial and government agency sources will be leveraged for required certifications, functional and operational tests, and acceptance support.• The NGLS program has an evolutionary acquisition strategy for the legacy NGLS Mounted and Dismounted and an incremental acquisition strategy for new developmental variants (NGLS-SM, NGLS-Sonic Projection). Commercial and government agencies will be leveraged for engineering, required certifications, functional and operating tests and acceptance support.• The MPC program will pursue incremental development of advanced media and analytic software capabilities following commercial standards and best practices.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) D476 / Military Information Support Operations					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-Mission Payload (MMP)	MIPR	Various : Various	8.310	3.089	Jan 2019	-		1.178	Jan 2021	-		1.178	Continuing	Continuing	-
Fly Away Broadcast Systems (FABS)	Reqn	Various : Various	4.330	0.874	Apr 2019	0.888	Oct 2019	0.608	Dec 2020	-		0.608	Continuing	Continuing	-
Next Generation Loud Speakers (NGLS)	Allot	Various : Various	0.437	0.727	Apr 2019	0.762	Jun 2020	0.779	Nov 2020	-		0.779	Continuing	Continuing	-
NGLS Congressional Add	Allot	Various : Various	5.781	5.760	Apr 2020	4.000	Apr 2021	-		-		-	0.000	15.541	-
Media Production Center (MPC)	C/Various	Various : Various	-	-		-		2.694	Jan 2021	-		2.694	Continuing	Continuing	-
Prior Year	C/Various	Various : Various	22.706	-		-		-		-		-	0.000	22.706	-
Subtotal			41.564	10.450		5.650		5.259		-		5.259	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MMP	MIPR	Various : Various	0.441	0.143	Jan 2019	-		-		-		-	0.000	0.584	-
NGLS	Allot	Various : Various	-	0.100	Apr 2019	0.100	Aug 2020	0.100	Aug 2020	-		0.100	Continuing	Continuing	-
FABS	MIPR	Various : Various	-	-		-		0.100	Jan 2021	-		0.100	Continuing	Continuing	-
Prior Year	MIPR	Various : Various	0.125	-		-		-		-		-	0.000	0.125	-
Subtotal			0.566	0.243		0.100		0.200		-		0.200	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			42.130	10.693		5.750		5.459		-		5.459	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

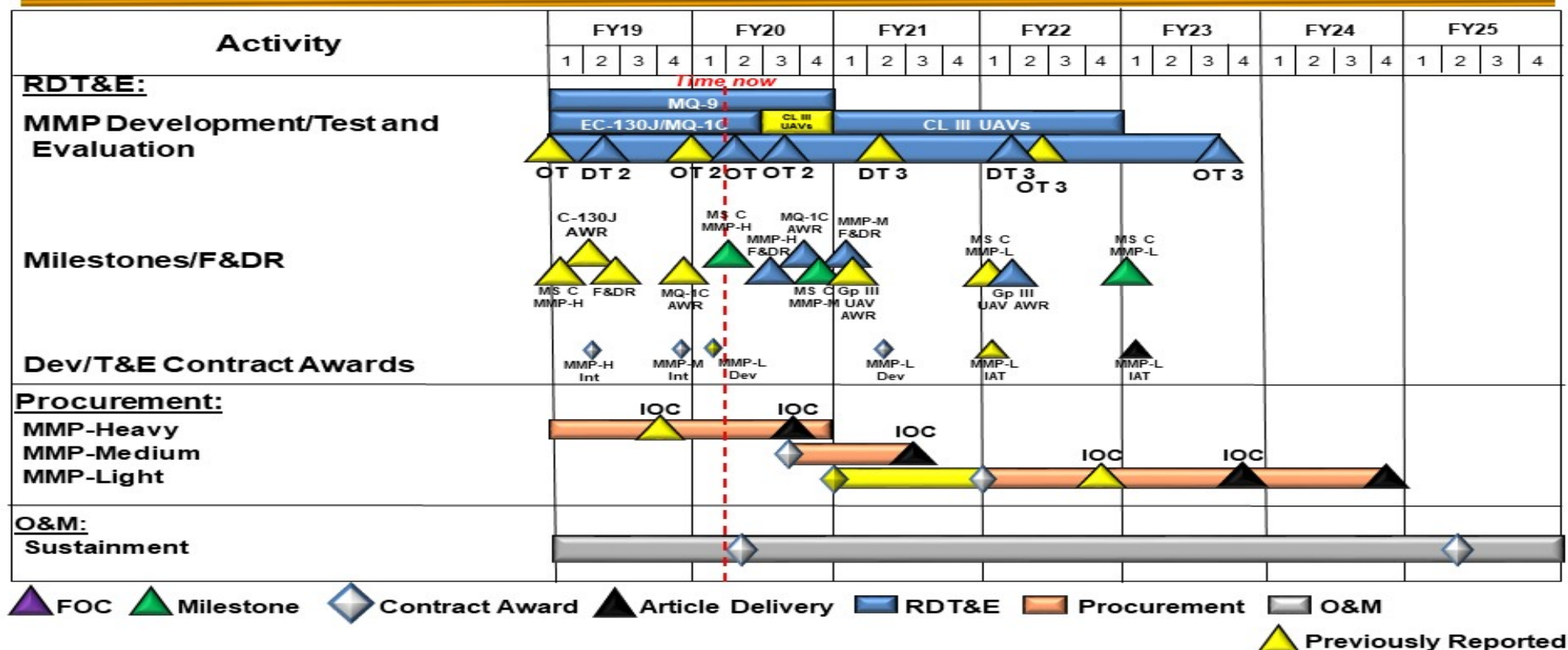
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
D476 / Military Information Support
Operations

Multi-Mission Payload (MMP) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

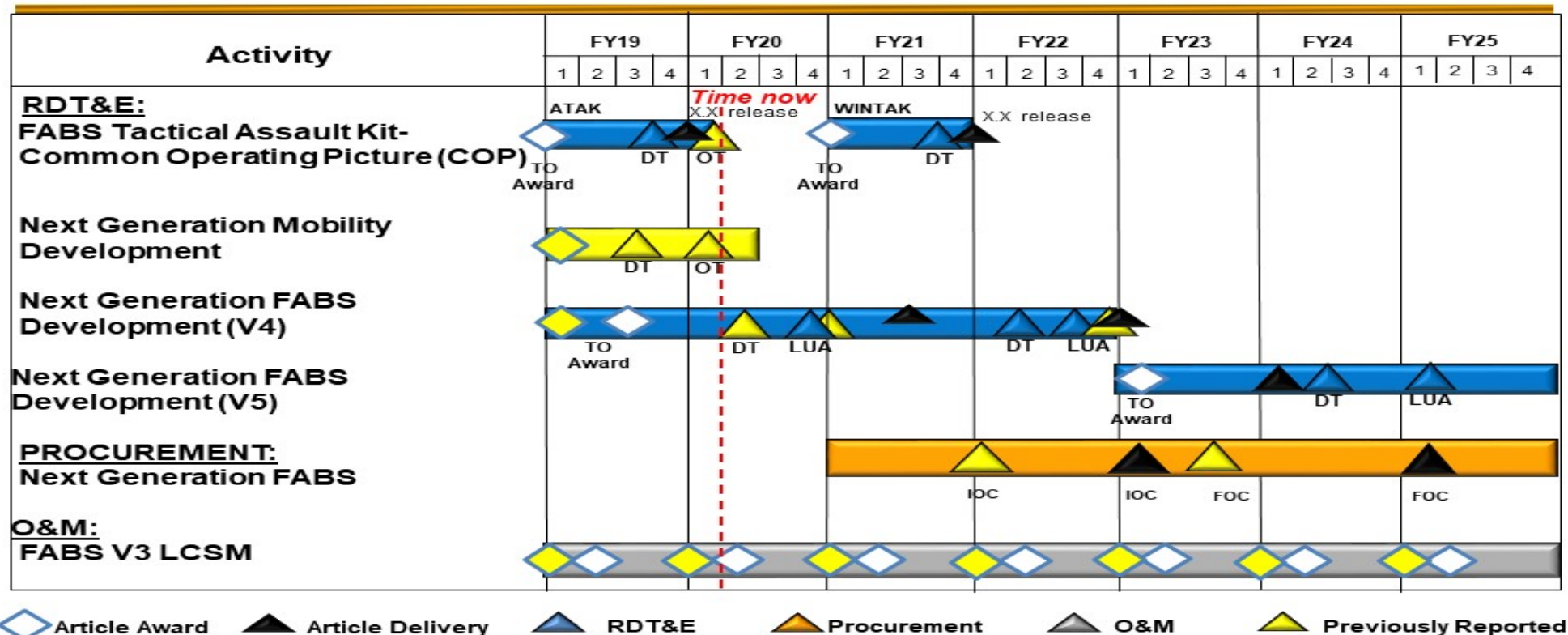
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
D476 / Military Information Support
Operations

Fly Away Broadcast System PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

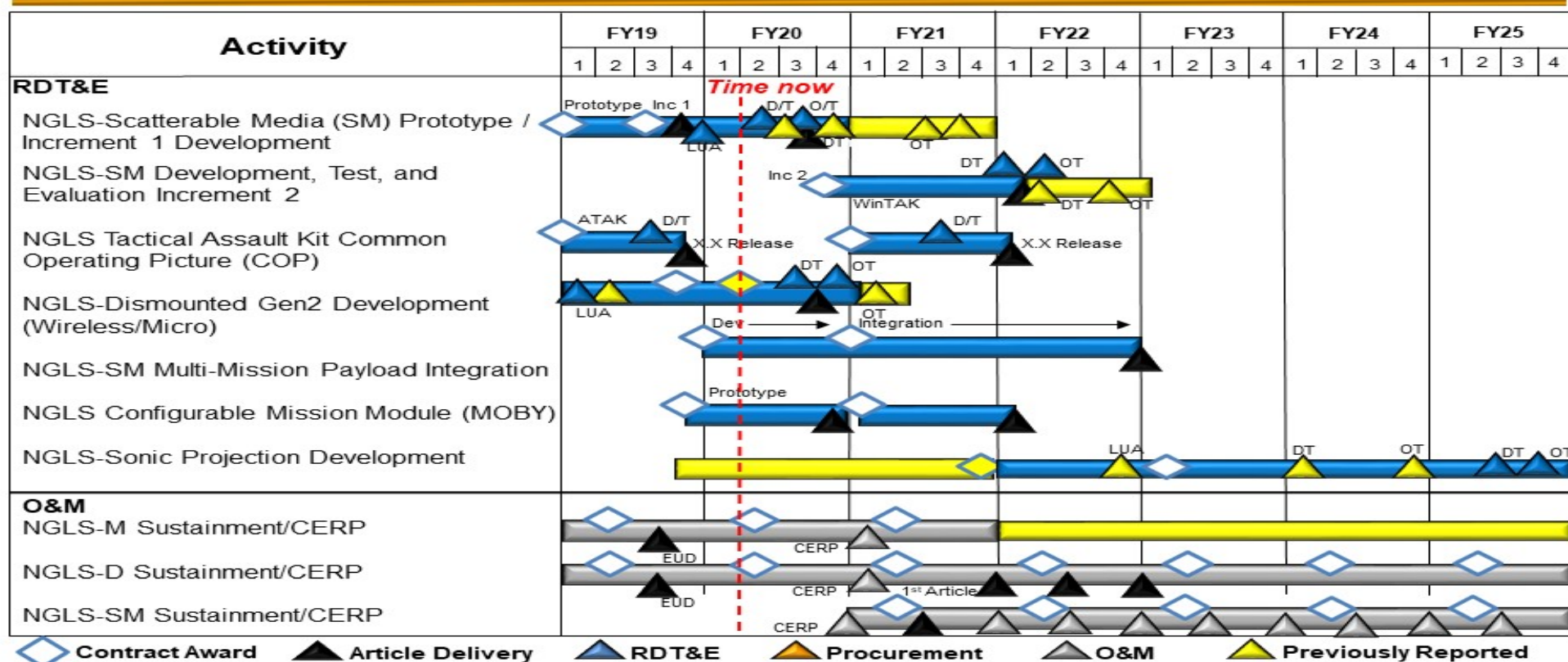
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
D476 / Military Information Support
Operations

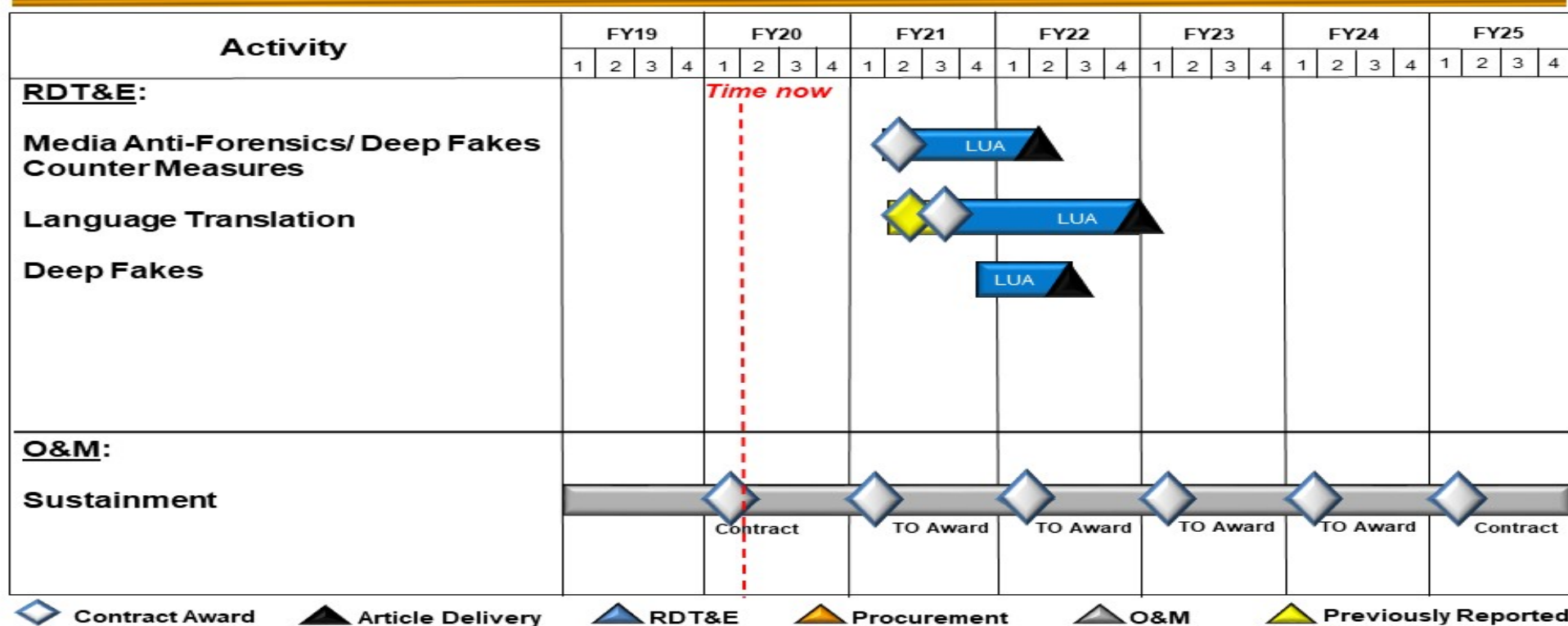
Next Generation Loudspeaker System (NGLS) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems		Project (Number/Name) D476 / Military Information Support Operations	

Media Production Center (MPC) PEO Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) D476 / <i>Military Information Support Operations</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Multi-Mission Payload (MMP)</i>				
Development	1	2019	4	2022
Test and Evaluation	1	2019	3	2023
<i>Fly Away Broadcast Systems (FABS)</i>				
Tactical Assault Kit - Common Operating Picture (COP)	1	2019	4	2021
FABS (V4) Development	3	2019	4	2022
FABS (V5) Development	1	2023	4	2025
<i>Next Generation Loudspeakers (NGLS)</i>				
Scatterable Media (SM) Development, Test, and Evaluation	1	2019	2	2022
NGLS Tactical Assault Kit Common Operating Picture	1	2019	1	2022
Dismounted GEN 2 Development, Test, and Evaluation	1	2019	1	2021
NGLS-SM Multi-Mission Payload Integration	1	2021	4	2022
NGLS Configurable Mission Module	4	2019	1	2022
Sonic Projection Development	1	2022	4	2025
<i>Media Production Center (MPC)</i>				
Media Anti Forensics	2	2021	2	2022
Language Translation	3	2021	4	2022
Deep Fakes	4	2021	3	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) S375 / <i>Weapons Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S375: <i>Weapons Systems</i>	4.829	1.212	1.625	1.604	-	1.604	1.529	1.561	1.597	1.629	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the next generation systems Pre-Planned Product Improvements (P3I), testing, and integration of specialized weapon systems and weapon accessories to meet the unique requirements of Special Operations Forces (SOF). The efforts include the product improvements and testing of the Suppressed Upper Receiver Group (SURG), Advanced Sniper Rifle (ASR), Machine Gun (MG) Barrel, Mid-Range Gas Gun (MRGG), Personal Defense Weapon (PDW), Hand Gun (HG) suppressor, Lightweight Machine Gun-Medium (LMG-M), and Advance Machine Gun (AMG). The product improvements will leverage the latest technological advances to achieve overmatch capability against current and emerging threats. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Weapons	1.212	1.625	1.604	-	1.604
Description: SOF weapons are developed to enable the operator to tailor the configuration of the weapon to the assigned mission and operational environment, enhancing the overall effectiveness of the weapons, which enables mission accomplishment and operator survivability. Weapons is designated a Middle Tier of Acquisitions (MTA) program which uses the rapid prototyping pathway and is executed using existing contracts, government agencies, and new contract competitively selected as appropriate.					
FY 2020 Plans: Continue development of enhanced capabilities to improve performance of individual sniper, rifle, and machine gun weapons.					
FY 2021 Base Plans: Continues development of enhanced capabilities to improve performance of individual sniper, rifle, and machine gun weapons.					
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.021 million due to minor adjustments.					
Accomplishments/Planned Programs Subtotals	1.212	1.625	1.604	-	1.604

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) S375 / <i>Weapons Systems</i>		

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PROC/0204WARRIOR: <i>Warrior Systems <\$5M</i>	470.285	335.992	260.733	32.573	293.306	276.972	282.592	285.664	286.725	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evolutionary acquisition, leveraging emerging technology and rapid prototyping efforts when appropriate. An evolutionary approach delivers capability in increments, recognizing, up front, the need for future capability improvements. Full and open competition with firm-fixed price contracts and other transaction authorities (OTAs).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S375 / <i>Weapons Systems</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Weapon Test & Evaluation	MIPR	Various : Various	4.829	1.212	Jan 2019	1.625	Jan 2020	1.604	Jan 2021	-		1.604	Continuing	Continuing	-
Subtotal			4.829	1.212		1.625		1.604		-		1.604	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.829	1.212		1.625		1.604		-		1.604	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

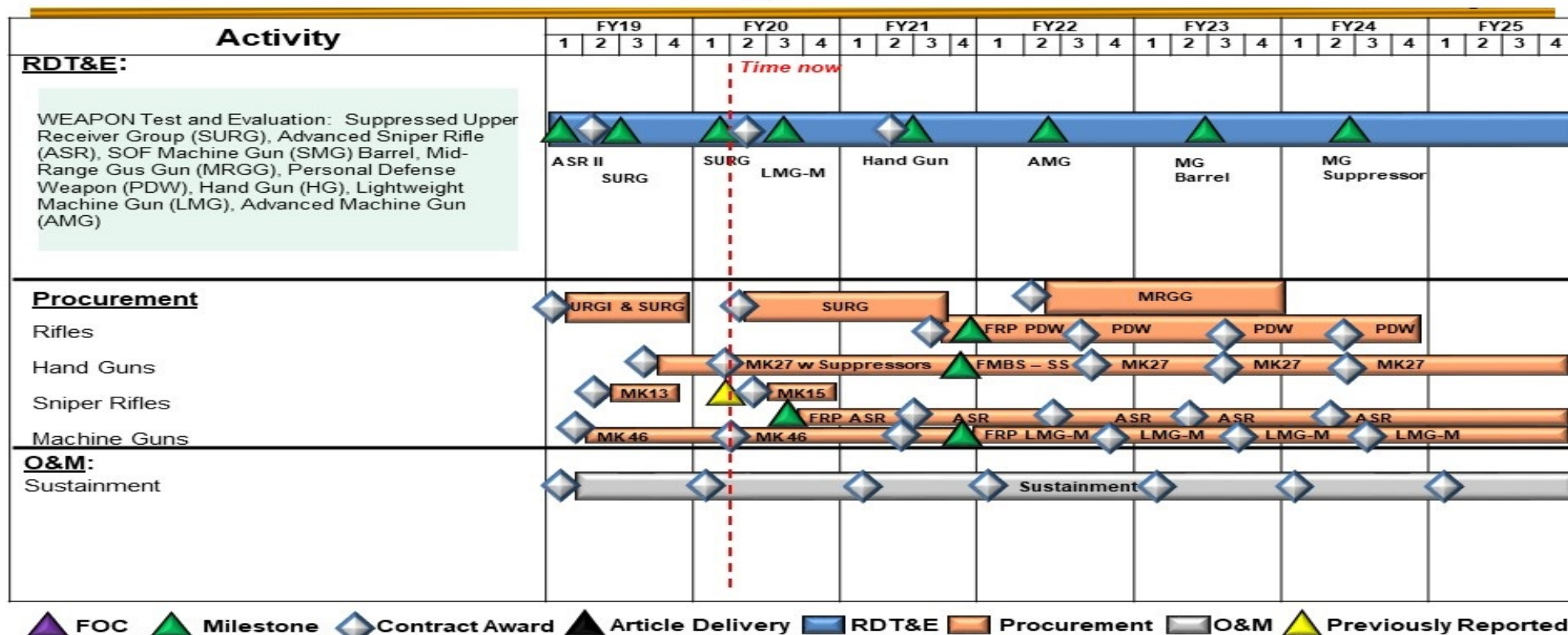
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S375 / Weapons Systems

Weapon Systems PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S375 / <i>Weapons Systems</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Weapon Systems</i>				
Test & Evaluation: Suppressed Upper Receiver Group, Advanced Sniper Rifle, SOF Machine Gun Barrel, Mid-Range Gas Gun, Personal Defense Weapon, Hand Gun, Lightweight Machine Gun, Advanced Machine Gun	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S385 / Soldier Protection and Survival Systems			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S385: Soldier Protection and Survival Systems	19.633	11.342	13.947	4.816	5.796	10.612	12.527	13.119	13.225	13.317	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project funds development, testing, integration, rapid prototyping and evaluation of specialized equipment to meet the unique soldier protection and survival requirements of Special Operations Forces (SOF), to include, but not limited to, individual survival equipment, hearing protection, clothing systems, load bearing equipment, Counter Radio Controlled Improvised Explosive Device (RC-IED) systems, Counter Unmanned Systems (aerial, ground and maritime), and personnel safety equipment to improve the mobility of SOF, while conducting varied missions. These missions are generally conducted in harsh and hostile environments, for unspecified periods and in locations requiring small unit autonomy. These technologies will be pursued via rapid prototyping efforts when appropriate.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: SOF Personal Equipment Advanced Requirements (SPEAR)								0.845	0.288	1.232	-	1.232
Description: The SPEAR program provides for the research, development, testing and evaluation of a variety of individual and survival equipment to include: ballistic and environmental protective combat uniforms, load carriage systems, communications headsets, and visual augmentation system mounts.												
FY 2020 Plans: Continue research and development of land communications materiel solutions and environmental protective combat uniforms. Continue materials testing and incorporation into commodity lines. Continue wireless headset evaluations. Continue interoperability of headsets with radios and integrated communication systems.												
FY 2021 Base Plans: Continues research and development of land communications materiel solutions and environmental protective combat uniforms. Continues materials testing and incorporation into commodity lines. Continues wireless headset evaluations. Continues interoperability of headsets with radios and integrated communication systems.												
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.944 million continues development supporting extreme weather clothing and equipment efforts, load carriage and body armor vest development and evaluations.												
Title: Tactical Combat Casualty Care (TCCC)								0.171	0.240	0.229	-	0.229

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems		Project (Number/Name) S385 / Soldier Protection and Survival Systems		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Description: TCCC provides lifesaving medical devices, ancillary equipment and Casualty Evacuation (CASEVAC) sets for SOF. The CASEVAC procures a suite of Food and Drug Administration (FDA) approved medical items including, but not limited, to intraosseous infusion devices, patient monitoring and assessment devices, emergency airway kits, as well as devices that provide SOF the capability to support extraction, mobility, transportation, and sustainment of casualties in forward areas. The TCCC program fields essential lifesaving CASEVAC equipment and capabilities and is a platform to transition capabilities developed under the National Mission Force's Tactical Medical Programs. This capability provides significant ability to lessen battlefield losses by providing timely, critical lifesaving and evacuation capabilities to the forward-deployed SOF operators.</p> <p>FY 2020 Plans: Continue test support to include program management, market surveys, rapid prototyping, test article acquisition, test and evaluation and systems engineering in direct support of the CASEVAC program. Continue the evaluation of enhanced medical monitoring systems capable of enabling telemedicine/telementoring for incorporation into the CASEVAC program.</p> <p>FY 2021 Base Plans: Continues test support to include program management, market surveys, rapid prototyping, test article acquisition, test and evaluation and systems engineering in direct support of the CASEVAC program. Continues the evaluation of enhanced medical monitoring systems capable of enabling telemedicine/telementoring for incorporation into the CASEVAC program.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.011 million due to the completion of the CASEVAC Prime vendor contract re-compete effort.</p>						
<p>Title: Counter Radio Controlled-Improvised Explosive Device (RC-IED)</p> <p>Description: Counter Radio Controlled-Improvised Explosive Device (RC-IED): United States Special Operations Command (USSOCOM) uses ground (mounted/dismounted) based jammers to counter Radio Controlled Improved Explosive devices. This program provides scalable RC-IED systems whose configuration and modularity address a mission critical capability to counter this threat globally. To stay ahead of emerging threats, USSOCOM has historically developed advanced techniques on annually recurring basis. Through strategic partnerships with the Services, and other government agencies, USSOCOM vastly improved program affordability while maintaining Joint Force compatibility. USSOCOM's special mission remains the priority, while the development of a third-party module, advanced techniques, and other hardware enhancements</p>		2.567	1.731	1.632	-	1.632

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems		Project (Number/Name) S385 / Soldier Protection and Survival Systems		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
are coordinated with other government agencies and services to tackle emerging threats. All next generation Electronic Countermeasures (ECM) development designed as National to Theatre (“N-to-T”) transition programs.						
FY 2020 Plans: Continue test support to the Counter RC-IED program. Continue system engineering, test and evaluation, test article acquisition, and market research of the RC-IED programs. Maintain range effectiveness and currency, ensuring the ability to accurately test against current and emerging threat systems. Continue development and testing of ECM systems capability to include advanced software technique countermeasures and loadsets for mounted and dismounted systems. Continue implementation of Modi software refactoring, improving stability and future technology integration.						
FY 2021 Base Plans: Continues test support to the Counter RC-IED program. Continues system engineering, test and evaluation, test article acquisition, and market research of the RC-IED programs. Maintains range effectiveness and currency, ensuring the ability to accurately test against current and emerging threat systems from state and non-state actors. Continues development and testing of ECM systems capability to include advanced software technique countermeasures and loadsets for mounted and dismounted systems. Continues implementation of Modi software refactoring, improving stability and future technology integration.						
FY 2020 to FY 2021 Increase/Decrease Statement: Net decrease of \$0.099 million is due to minor adjustments.						
Title: Counter Unmanned Aerial System (C-UAS)		4.662	10.000	0.000	5.796	5.796
Description: SOF C-UAS enhances the SOF operator’s ability to detect, identify, classify, locate, track, deter, defeat and exploit unmanned system threats. The funding in this program supports a Family of Systems (FoS) design, development, integration, rapid prototyping and test of cutting edge C-UAS sensor integration technologies that delivers and integrates various detection sensor modalities including, but not limited to, passive sensors, Radio frequency (RF) detection, acoustic, Light Detection and Ranging (LiDAR), radar, and Electro-Optical and Infrared (EO/IR). This program received Overseas Contingency Operations (OCO) funding in FY 2019 and FY 2020. C-UAS is designated a MTA program which uses the rapid prototyping pathway and is executed using existing contracts, government agencies, and new contract competitively selected as appropriate.						
FY 2020 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020			
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S385 / Soldier Protection and Survival Systems				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue and complete C-UAS System Integration Module (SIM) FoS Middle Tier Acquisition (MTA) rapid prototype phase 2 development and begin phase 3 test and operational assessment of layered multi-sensor interface technologies. Begin development and test of kinetic and non-kinetic capabilities of mounted, dismounted and fixed-site expeditionary form factors to address emerging threats. Conduct kinetic feasibility assessment. FY 2021 Base Plans: N/A FY 2021 OCO Plans: Continues C-UAS SIM FoS MTA rapid prototype phase 3 of layered multi-sensor interface technologies. Continues development and test of kinetic and non-kinetic capabilities of mounted, dismounted and fixed-site expeditionary form factors to address emerging threats. Continues kinetic feasibility assessment. FY 2020 to FY 2021 Increase/Decrease Statement: Net decrease of \$4.204 million is due to completion of SIM Phase 2: Prototype Development in FY20 (-\$4.000 million) and funding made available due to streamlining contract support efforts (-\$0.204 million).						
Title: Personal Signature Management (PSM) Description: PSM provides for development, rapid prototyping, test, and evaluation of signature reducing materials and technology, in order to reduce the probability of detection by battlefield threat sensors. FY 2020 Plans: Continue research, development, rapid prototyping, test and evaluation of next generation signature reducing solutions. Provide for program management, market research, test item acquisition and test and evaluation, in support of PSM efforts for both land and maritime operations. FY 2021 Base Plans: Continues research, development, rapid prototyping, test and evaluation of next generation signature reducing solutions. Provides for program management, market research, test item acquisition and test and evaluation, in support of PSM efforts for both land and maritime operations. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.035 million is due to anticipated cost increase of threat sensor exploitation efforts.		1.597	1.688	1.723	-	1.723
Accomplishments/Planned Programs Subtotals		9.842	13.947	4.816	5.796	10.612

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S385 / <i>Soldier Protection and Survival Systems</i>	

	FY 2019	FY 2020
Congressional Add: Rotary Wing Aviation Helmet	1.500	-
FY 2019 Accomplishments: Research and development of rotary wing aviation helmet.		
Congressional Adds Subtotals	1.500	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0204WARRIOR: <i>Warrior Systems<\$5M</i>	470.285	335.992	260.733	32.573	293.306	276.972	282.592	285.664	286.725	Continuing	Continuing

Remarks

D. Acquisition Strategy

SPEAR: Contracts in support of SPEAR are a combination of firm fixed price five year indefinite delivery indefinite quantity with single vendor awards, Source America mandatory sole sources, small business set asides and prime vendor style multiple awards.

Tactical Combat Casualty Care (TCCC): Operator & Medic Kits - Program managed by Program Manager-Special Operations Forces Survival, Support, and Equipment Systems (PM-SOF SSES) using US Army Medical Materiel Agency prime vendor contracts for equipment purchases and the Special Operations Forces Support Activity for warehousing and sustainment. CASEVAC Set - Program managed by PM-SOF SSES and utilizes and Indefinite Delivery Indefinite Quantity Commercial-Off-The-Shelf (COTS) prime integrator contract.

Counter Radio Controlled - Improvised Explosive Device (RC-IED): USSOCOM collaborates with the DoD Joint CREW manager and other government agencies in order to maintain Joint Force compatibility and improve program affordability. All next generation ECM development designed as National to Theater ("N-to-T") transition programs. Centralized life cycle sustainment of SOF CREW inventory supports TSOC operational demand as Theater Provided Equipment (TPE). SOF RC-IED collaborates with the Joint Services, Academia and other government agencies to maintain interoperability and cost effectiveness. SOF RC-IED will continue to leverage the SOF-to-Service transition of proven capabilities.

Counter Unmanned Aerial System (C-UAS): SOF C-UAS acquisition strategy utilizes middle tier acquisition (MTA) rapid prototyping to develop and integrate various advancing sensors with kinetic and non-kinetic capabilities in mounted, dismounted and expeditionary fixed-site form factors, while the services focus primarily on providing capability to address fixed site defense of homeland and Forward Operating Bases (FOBs). Upon completion of various Combat Evaluations in FY20, C-UAS will transition into a Program of Record with an approved Capabilities Development Document (CDD). C-UAS will implement an incremental acquisition strategy as an enabling technology for future application to include additional capabilities given program/acquisition constraints and SOF operator requirements/priorities. Contracts are expected to be a combination of Firm Fixed Price (FFP) and Cost type through full and open competition across the SOCOM focus areas.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S385 / <i>Soldier Protection and Survival Systems</i>
<p>SOF C-UAS collaborates with the Joint Services, Academia and other government agencies to maintain interoperability and cost effectiveness. SOF C-UAS will continue to leverage the SOF-to-Service transition of proven capabilities where possible.</p> <p>Personal Signature Management (PSM): Signature reducing technologies will be embedded into SOF clothing and equipment via modified commercial-off-the-shelf variants. Contracts in support of fielding/sustainment of PSM clothing and equipment will be a combination of sole source firm fixed price 5-year indefinite delivery indefinite quantity contracts, Source America mandatory sole sources, small business set asides and prime vendor style multiple award contracts. PSM will utilize SOFSA for warehousing and sustainment.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S385 / Soldier Protection and Survival Systems					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOF Personal Equipment Advanced Requirements (SPEAR) - Protective Combat Uniform (PCU)	Various	PM-SSES : Natick, MA	0.447	0.200	Jan 2019	0.067	Jan 2020	0.400	Jan 2021	-		0.400	Continuing	Continuing	-
SPEAR - Hearing Protection and Communications Headsets	Various	PM-SSES : Natick, MA	1.195	0.150	Feb 2019	0.047	Jan 2020	0.300	Jan 2021	-		0.300	Continuing	Continuing	-
SPEAR Modular Glove System (MGS)	Various	PM-SSES : Natick, MA	0.040	0.010	Jan 2019	0.006	Jan 2020	0.030	Jan 2021	-		0.030	Continuing	Continuing	-
SPEAR - Load Carriage System (LCS) and Backpacks	Various	PM-SSES : Natick, MA	0.055	0.035	Mar 2019	0.019	Mar 2020	0.100	Mar 2021	-		0.100	Continuing	Continuing	-
Counter Unmanned Aerial System (C-UAS) Emerging Threat Development (Dismount/Mount/EXP) (OCO)	C/Various	Various : Various	-	-		4.440	Jan 2020	-		-		-	0.000	4.440	-
C-UAS Emerging Threat Development (Dismount/Mount/EXP) (OCO)	C/Various	Various : Various	-	-		-		0.000		3.000	Jan 2021	3.000	Continuing	Continuing	-
C-UAS SIM Phase I: Concept Development (OCO)	C/Various	Night Vision Labs : Ft. Belvoir, VA	-	3.000	Feb 2019	-		-		-		-	0.000	3.000	-
C-UAS SIM Phase II: Prototype Development	C/Various	Night Vision Labs : Ft. Belvoir, VA	-	-		4.000	Jan 2020	-		-		-	0.000	4.000	-
C-UAS SIM Phase III: Operational Assessment and Test (OCO)	C/Various	Various : Various	-	-		-		0.000		1.133	Mar 2021	1.133	Continuing	Continuing	-
Rotary Wing Aviation Helmet Congressional Add	C/Various	PM-SSES : Natick, MA	-	1.500	Sep 2019	-		-		-		-	0.000	1.500	-
Personal Signature Management (PSM) Development (Inc II and III)	Various	Various : Various	-	0.799	Sep 2019	-		0.861	Jan 2021	-		0.861	Continuing	Continuing	-
Subtotal			1.737	5.694		8.579		1.691		4.133		5.824	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S385 / Soldier Protection and Survival Systems					
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEAR - PCU testing/P3I	Various	PM-SSES : Natick, MA	0.356	0.200	Feb 2019	0.056	Mar 2020	0.100	Mar 2021	-		0.100	Continuing	Continuing	-
SPEAR-MGS Test and Evaluation	Various	PM-SSES : Natick, MA	0.091	0.010	Jan 2019	0.010	Jan 2020	0.045	Jan 2021	-		0.045	Continuing	Continuing	-
SPEAR - Hearing Protection and Comms Headset T&E	Various	PM-SSES : Natick, MA	1.668	0.210	Jan 2019	0.061	Jan 2020	0.162	Jan 2021	-		0.162	Continuing	Continuing	-
SPEAR - LCS/Body Armor Vest/Backpack Material and Prototype Test and Evaluation	Various	PM-SSES : Natick, MA	0.116	0.030	Jan 2019	0.022	Feb 2020	0.095	Feb 2021	-		0.095	Continuing	Continuing	-
Tactical Combat Casualty Care CASEVAC Sets Development, Test and Evaluation	Various	PM-SSES : Natick, MA	1.567	0.171	Feb 2019	0.240	Feb 2020	0.229	Jan 2021	-		0.229	Continuing	Continuing	-
Counter Radio Controlled - Improvised Explosive Device Technology Insertion/SW/Techniques	C/Various	Various : Various	13.127	2.567	Mar 2019	1.731	Mar 2020	1.632	Mar 2021	-		1.632	Continuing	Continuing	-
C-UAS Tech. and Concept Evaluation	C/Various	Various : Various	0.411	0.162	Feb 2019	-		-		-		-	0.000	0.573	-
C-UAS Test and Evaluation Support	C/Various	Various : Various	-	1.500	Nov 2018	-		-		-		-	0.000	1.500	-
C-UAS Test and Evaluation Support (OCO)	C/Various	Various : Various	-	-		1.560	Nov 2019	0.000		1.663	Nov 2020	1.663	Continuing	Continuing	-
Personal Signature Management (PSM) Test and Evaluation	Various	Various : Various	-	0.798	Jan 2019	1.688	Jan 2020	0.862	Jan 2021	-		0.862	Continuing	Continuing	-
Prior Year	MIPR	Various : Various	0.160	-		-		-		-		-	0.000	0.160	-
Prior Year (OCO)	Various	Various : Various	0.400	-		-		-		-		-	0.000	0.400	-
Subtotal			17.896	5.648		5.368		3.125		1.663		4.788	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command											Date: February 2020						
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems					Project (Number/Name) S385 / Soldier Protection and Survival Systems							
					Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals					19.633	11.342		13.947		4.816		5.796		10.612	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

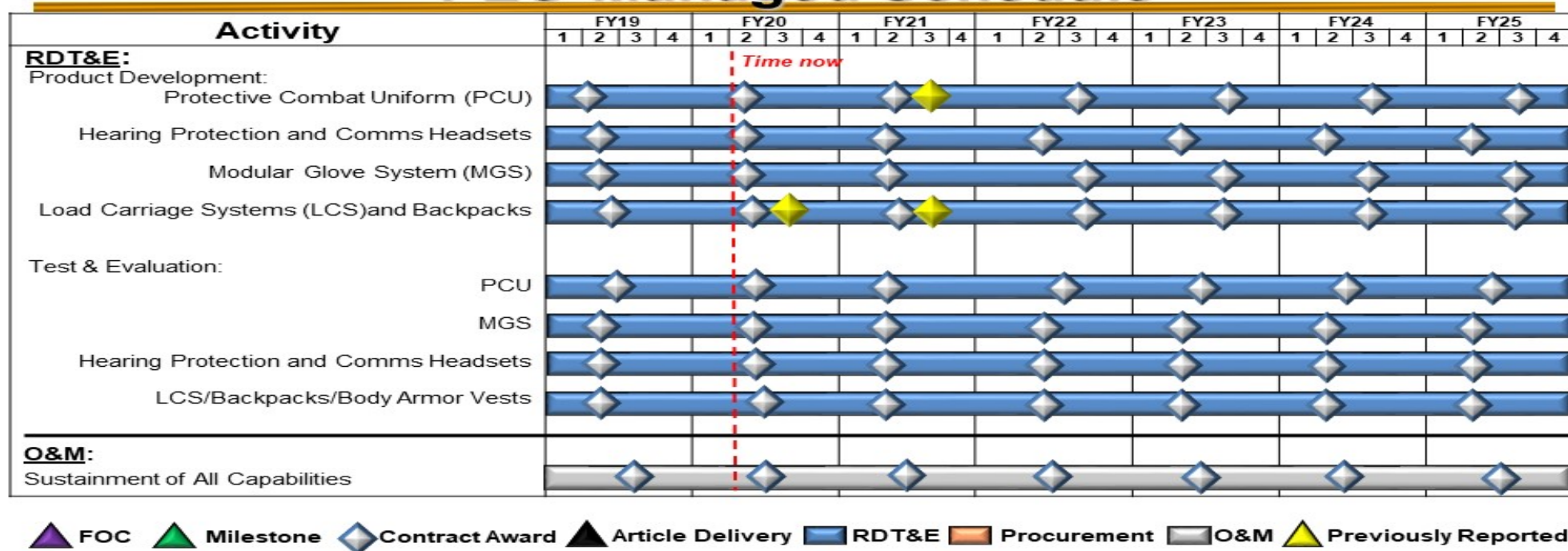
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S385 / Soldier Protection and Survival Systems

SOF Personal Equipment Advanced Requirements (SPEAR) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

Appropriation/Budget Activity

0400 / 7

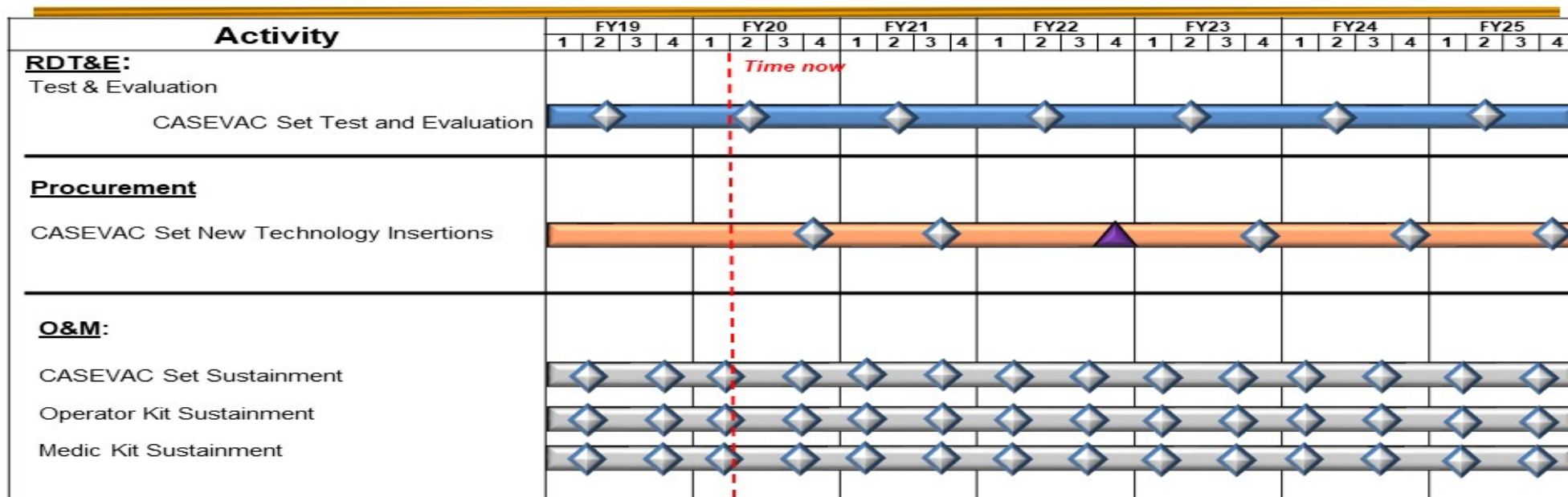
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PE 1160431BB / Warrior Systems

Project (Number/Name)

S385 / Soldier Protection and Survival Systems

Tactical Combat Casualty Care (TCCC) PEO-Managed Schedule

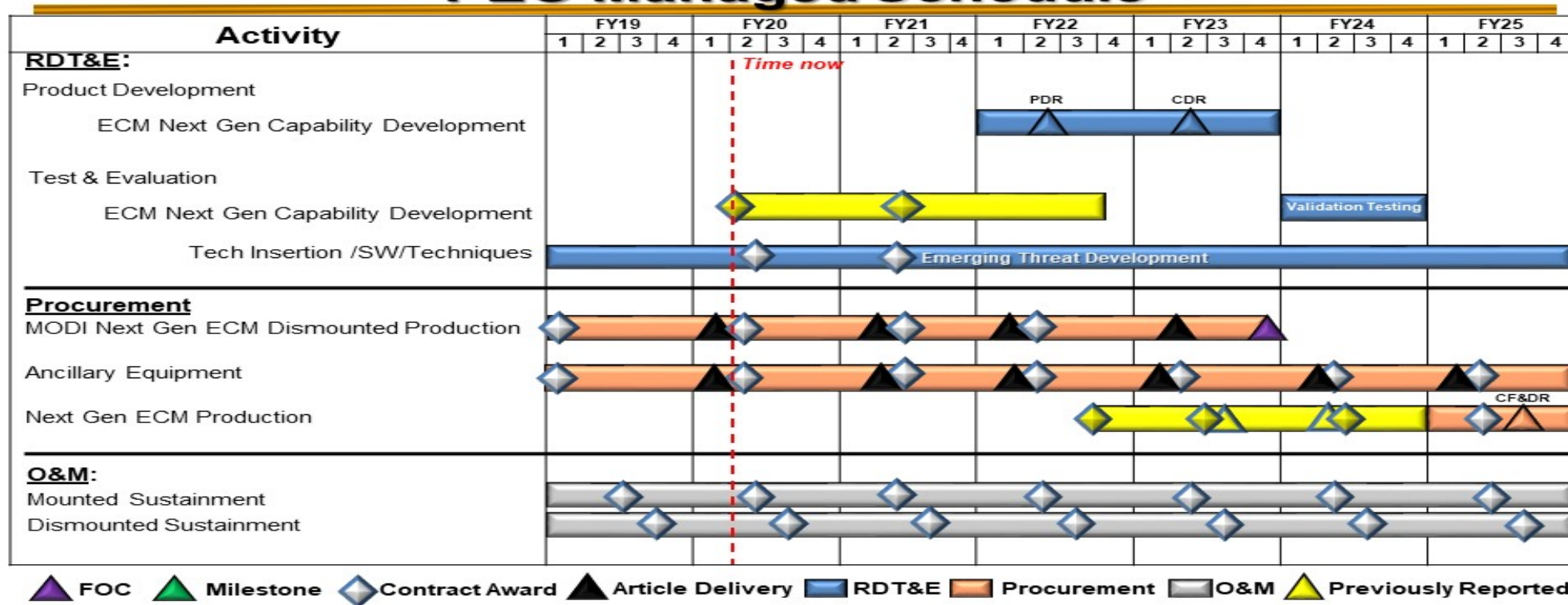


FOC
 Milestone
 Contract Award
 Article Delivery
 RDT&E
 Procurement
 O&M
 Previously Reported

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S385 / Soldier Protection and Survival Systems	

Counter Radio Controlled - Improvised Explosive Device (RC-IED) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

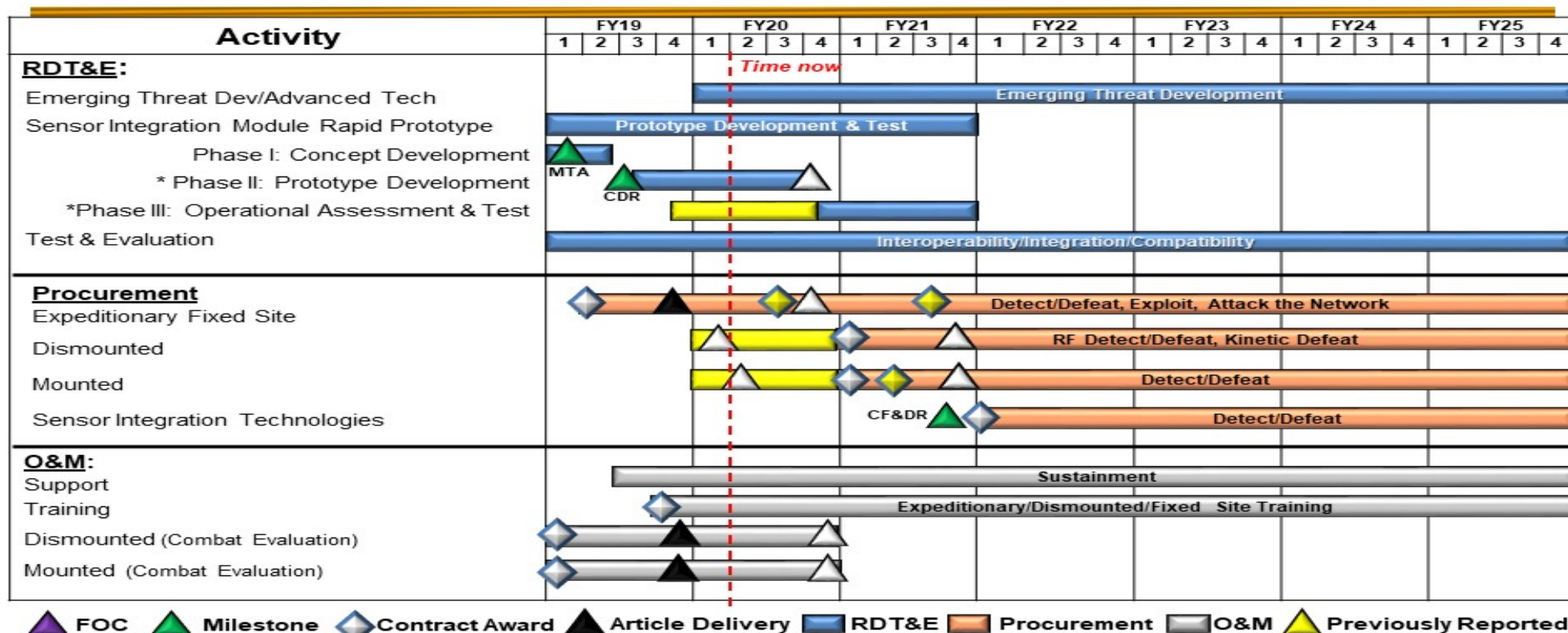
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S385 / Soldier Protection and Survival Systems

Counter Unmanned Aerial Systems PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

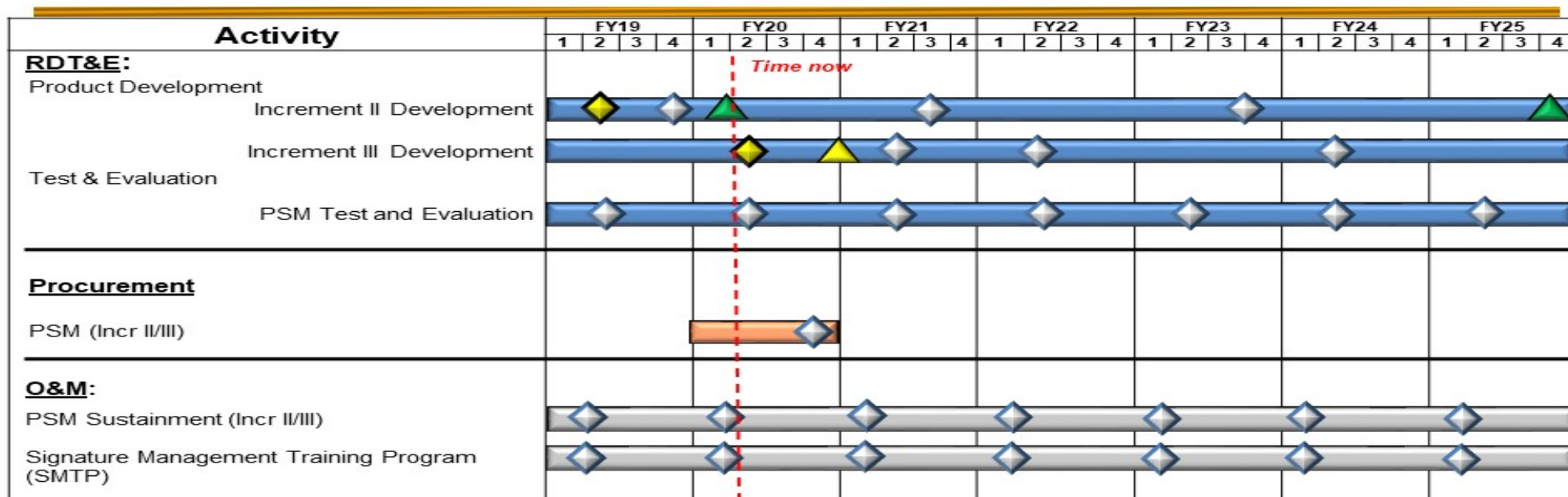
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S385 / Soldier Protection and Survival Systems

Personal Signature Management (PSM) PEO-Managed Schedule



 FOC
  Milestone
  Contract Award
  Article Delivery
  RDT&E
  Procurement
  O&M
  Previously Reported

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S385 / Soldier Protection and Survival Systems	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Soldier Protection and Survival Systems (SPEAR)</i>				
Protective Combat Uniform (PCU) Product Development	1	2019	4	2025
Modular Integrated Communications Helmet (MICH) Comms/Land Maritime Communication System Product Development	1	2019	4	2025
Modular Glove System (MGS) Product Development	1	2019	4	2025
Load Carriage System (LCS) and Backpacks Product Development	1	2019	4	2025
PCU Test & Evaluation	1	2019	4	2025
MGS Test & Evaluation	1	2019	4	2025
Comms Test & Evaluation	1	2019	4	2025
LCS/Backpack/Body Armor Vest Test & Evaluation	1	2019	4	2025
<i>Tactical Combat Casualty Care (TCCC)</i>				
TCCC CASEVAC Sets Development, Test & Evaluation	1	2019	4	2025
<i>Counter Radio Controlled-Improvised Explosive Device (R-CIED)</i>				
Next Generation ECM Capability Development (Product Development)	1	2022	4	2023
Next Generation ECM Capability Development (Test & Evaluation Support)	1	2024	4	2024
Technology Insertion/SW/Techniques (Test & Evaluation Support)	1	2019	4	2025
<i>Counter Unmanned Aerial System (C-UAS)</i>				
Emerging Threat Development / Advanced Technology	1	2020	4	2025
C-UAS Family of Systems (FoS) SIM - Phase 1 (Technology and Concept Evaluation)	1	2019	2	2019
C-UAS FoS-SIM - Phase 2 (Prototype Development)	3	2019	4	2020
C-UAS FoS-SIM - Phase 3 (Prototype Operational Assessment and Test)	4	2020	4	2021
Interoperability, Integration and Compatibility Test	1	2019	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S385 / <i>Soldier Protection and Survival Systems</i>		

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
<i>Personnel Signature Management (PSM)</i>				
PSM Development (Incr II)	1	2019	4	2025
PSM Development (Incr III)	1	2019	4	2025
PSM Test & Evaluation	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S385A / Body Armor and Associated Equipment			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S385A: Body Armor and Associated Equipment	7.572	1.006	1.752	1.738	-	1.738	1.694	1.729	1.770	1.805	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides specialized equipment to meet the unique operator protection and survival requirements of SOF, to include: Army Rangers; Army Special Forces; Navy Sea, Air, Land (SEAL) teams; Navy Special Boat Units; Air Force Operators; and Marine Raiders. Specialized ballistic equipment improves survivability impacting the mobility of SOF while conducting varied missions. These missions are generally conducted in harsh environments, for unspecified periods and in locations requiring small unit autonomy.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: SOF Personal Equipment Advanced Requirement (SPEAR)-Ballistic Protection	1.006	1.752	1.738	-	1.738
Description: This project enhances the SPEAR program by supporting body armor helmets and eye protection. It also provides for the research, development, and testing of a variety of body armor and personal protective equipment.					
FY 2020 Plans: Continue foreign ammunition testing and threat validation to assess effectiveness of currently fielded personal protective equipment. Continue development and testing of lightweight body armor and helmets to upgrade systems that have been fielded. Continue evaluation of transparent armor products which include variable light transmission and laser lenses to upgrade systems that have been fielded. Continue development and testing of technologies to upgrade the maritime crewman helmet.					
FY 2021 Base Plans: Continues foreign ammunition testing and threat validation to assess effectiveness of currently fielded personal protective equipment. Continues development and testing of lightweight body armor and helmets to upgrade systems that have been fielded. Continues evaluation of transparent armor products which include variable light transmission and laser lenses to upgrade systems that have been fielded. Continues development and testing of technologies to upgrade the maritime crewman helmet.					
FY 2020 to FY 2021 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020	
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>		Project (Number/Name) S385A / <i>Body Armor and Associated Equipment</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO
Decrease of \$0.014 million is due to minor adjustments.					
Accomplishments/Planned Programs Subtotals		1.006	1.752	1.738	-
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy SPEAR ballistic protection equipment takes advantage of modified Commercial-Off-The-Shelf (COTS) or non-developmental items. As USSOCOM required tailored solutions for SOF Mission sets, SPEAR items leveraged from industry are often on cutting edge of technology with modifications specific for SOF missions and require substantial testing in SOF environments. Utilizes Special Operations Forces Support Activity (SOFSa) for warehousing and sustainment, Program Manager Special Operations Forces - Survival, Support, and Equipment Systems (PM-SOF SSES) has cradle to grave responsibility. Contracts in support of SPEAR are a combination of firm fixed price five year indefinite delivery indefinite quantity with single vendor awards, Source America mandatory sole sources, small business set asides and prime vendor style multiple award contracts.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S385A / Body Armor and Associated Equipment					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOF Personal Equipment Advanced Requirement (SPEAR) - Body Armor	Various	PM-SSES : Natick, MA	2.505	0.338	Apr 2019	0.395	Feb 2020	0.387	Feb 2021	-		0.387	Continuing	Continuing	-
SPEAR - Lightweight Ballistic Helmets	Various	PM-SSES : Natick, MA	1.717	0.126	May 2019	0.385	Jan 2020	0.378	Jan 2021	-		0.378	Continuing	Continuing	-
SPEAR - Eye Protection	Various	PM-SSES : Natick, MA	0.236	0.050	Apr 2019	0.107	Mar 2020	0.116	Mar 2021	-		0.116	Continuing	Continuing	-
Subtotal			4.458	0.514		0.887		0.881		-		0.881	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEAR - Body Armor	Various	PM-SSES : Natick, MA	1.726	0.301	Apr 2019	0.385	Apr 2020	0.381	Apr 2021	-		0.381	Continuing	Continuing	-
SPEAR - Lightweight Ballistic Helmet	Various	PM-SSES : Natick, MA	1.231	0.153	Jun 2019	0.385	Apr 2020	0.381	Apr 2021	-		0.381	Continuing	Continuing	-
SPEAR - Transparent Armor	Various	PM-SSES : Natick, MA	0.157	0.038	Apr 2019	0.095	Mar 2020	0.095	Mar 2021	-		0.095	Continuing	Continuing	-
Subtotal			3.114	0.492		0.865		0.857		-		0.857	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			7.572	1.006		1.752		1.738		-		1.738	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

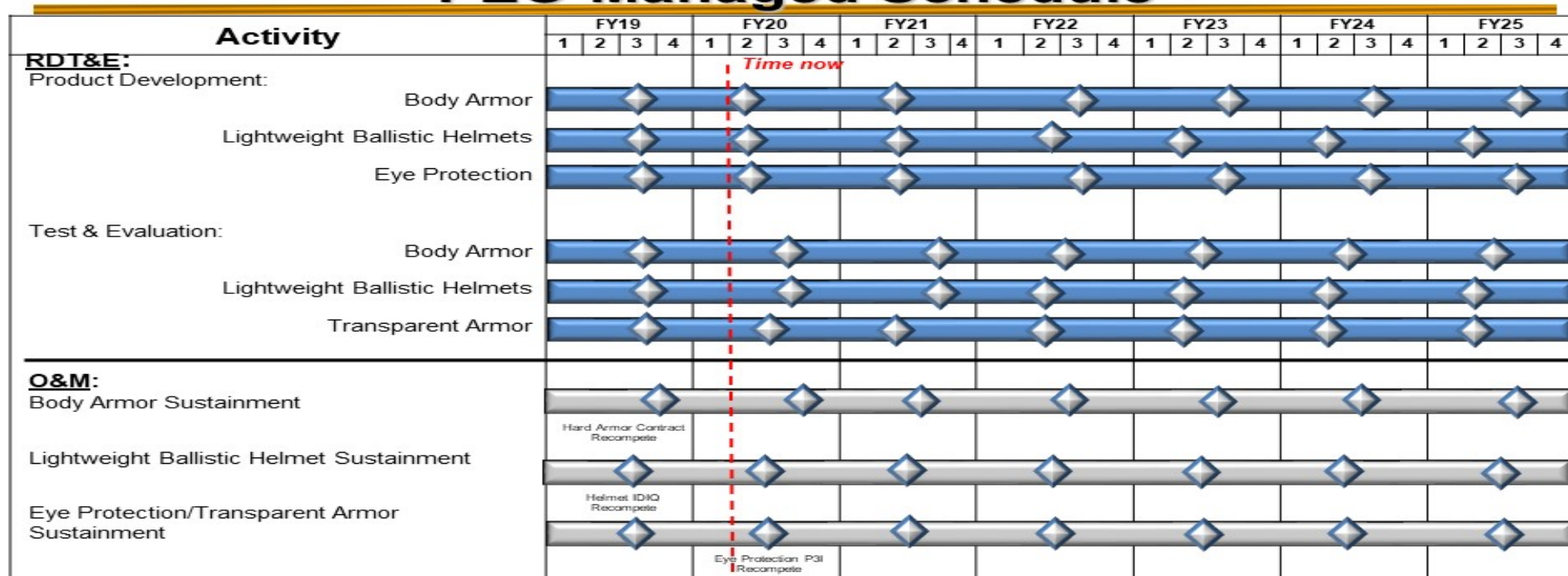
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S385A / Body Armor and Associated Equipment

SOF Personal Equipment Advanced Requirements (SPEAR) - Body Armor PEO-Managed Schedule



FOC
 Milestone
 Contract Award
 Article Delivery
 RDT&E
 Procurement
 O&M
 Previously Reported

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S385A / <i>Body Armor and Associated Equipment</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Body Armor and Associated Equipment</i>				
Body Armor Product Development	1	2019	4	2025
Lightweight Ballistic Helmets Product Development	1	2019	4	2025
Eye Protection Product Development	1	2019	4	2025
Body Armor Test & Evaluation	1	2019	4	2025
Lightweight Ballistic Helmets Test & Evaluation	1	2019	4	2025
Transparent Armor Test & Evaluation	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S395 / Visual Augmentation, Lasers and Sensor Systems			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S395: Visual Augmentation, Lasers and Sensor Systems	12.323	1.054	3.212	2.171	-	2.171	2.097	2.132	2.174	2.218	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for development, testing and integration of specialized visual augmentation, binocular and monocular night vision devices, laser markers, laser designators, geo-location systems, weapon optics, weapon aiming lasers, sensor systems, visible lights, infrared imagers, clandestine pointers, simulators and accessories to meet the unique requirements of SOF. These projects ensure SOF hyper-enabled operators will remain technologically superior to enemy threats and ensure mission success.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Visual Augmentation Systems (VAS)	1.054	3.212	2.171	-	2.171
Description: Sensor technologies being developed include image intensification thermal imaging, short wave infrared, multi-spectral, fusion, and other sensor types. Developments will decrease weight, increase range, increase situational awareness, provide data, image processing, image filtering, determine wind speed, observe bullet trace, and sensor fusion to be able to detect, identify, classify and engage targets at greater ranges. Some efforts may be tied to Hyper-Enabled Operator (HEO).					
FY 2020 Plans: Continue development and testing of visual augmentation, laser devices, and begin development and testing of simulators to improve situational awareness, sharing of data/images, target acquisition, and training.					
FY 2021 Base Plans: Continues development and testing of visual augmentation, laser devices, and continues development and testing of simulators to improve situational awareness, sharing of data/images, target acquisition, and training.					
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$1.041 million is due to efficiencies gained in simulator development by combining new standards and protocols that will provide the architecture to integrate service common simulators into current SOCOM simulators.					
Accomplishments/Planned Programs Subtotals	1.054	3.212	2.171	-	2.171

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) S395 / <i>Visual Augmentation, Lasers and Sensor Systems</i>		

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PROC/0204WARRIOR: <i>Warrior Systems<\$5M</i>	470.285	335.992	260.733	32.573	293.306	276.972	282.592	285.664	286.725	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evolutionary acquisition and leveraging emerging technologies. An evolutionary approach delivers capability in increments, recognizing, up front, the need for future capability improvements. Full and open competition; Contracts are a combination of five-year Firm Fixed Price Indefinite Delivery Indefinite Quantity (IDIQ) and small business set asides at several location; primarily via Naval Surface Warfare Center, Crane Contracting office, USSOCOM Contracting Office and other contracting offices.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) S395 / <i>Visual Augmentation, Lasers and Sensor Systems</i>					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Visual Augmentation Systems (VAS) Product Development (Laser and Optic)	C/CPFF	USSOCOM : Tampa, FL	9.161	1.054	Jan 2019	1.507	Apr 2020	1.000	Apr 2021	-		1.000	Continuing	Continuing	-
Visual Augmentation Systems (VAS) Product Development (Simulator)	C/CPFF	USSOCOM : Tampa, FL	-	-		1.493	Apr 2020	0.481	Apr 2021	-		0.481	Continuing	Continuing	-
Prior Year Overseas Contingency Operations (OCO)	C/CPFF	USSOCOM : Tampa, FL	2.667	-		-		-		-		-	0.000	2.667	-
Subtotal			11.828	1.054		3.000		1.481		-		1.481	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
VAS Test and Evaluation	C/CPFF	USSOCOM : Tampa, FL	0.495	-		-		-		-		-	Continuing	Continuing	-
VAS Optic Test and Evaluation	C/CPFF	USSOCOM : Tampa FL	-	-		0.106	Apr 2020	0.345	Apr 2021	-		0.345	Continuing	Continuing	-
VAS Laser Test and Evaluation	C/CPFF	USSOCOM : Tampa FL	-	-		0.106	Apr 2020	0.345	Apr 2021	-		0.345	Continuing	Continuing	-
Subtotal			0.495	-		0.212		0.690		-		0.690	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.323	1.054		3.212		2.171		-		2.171	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

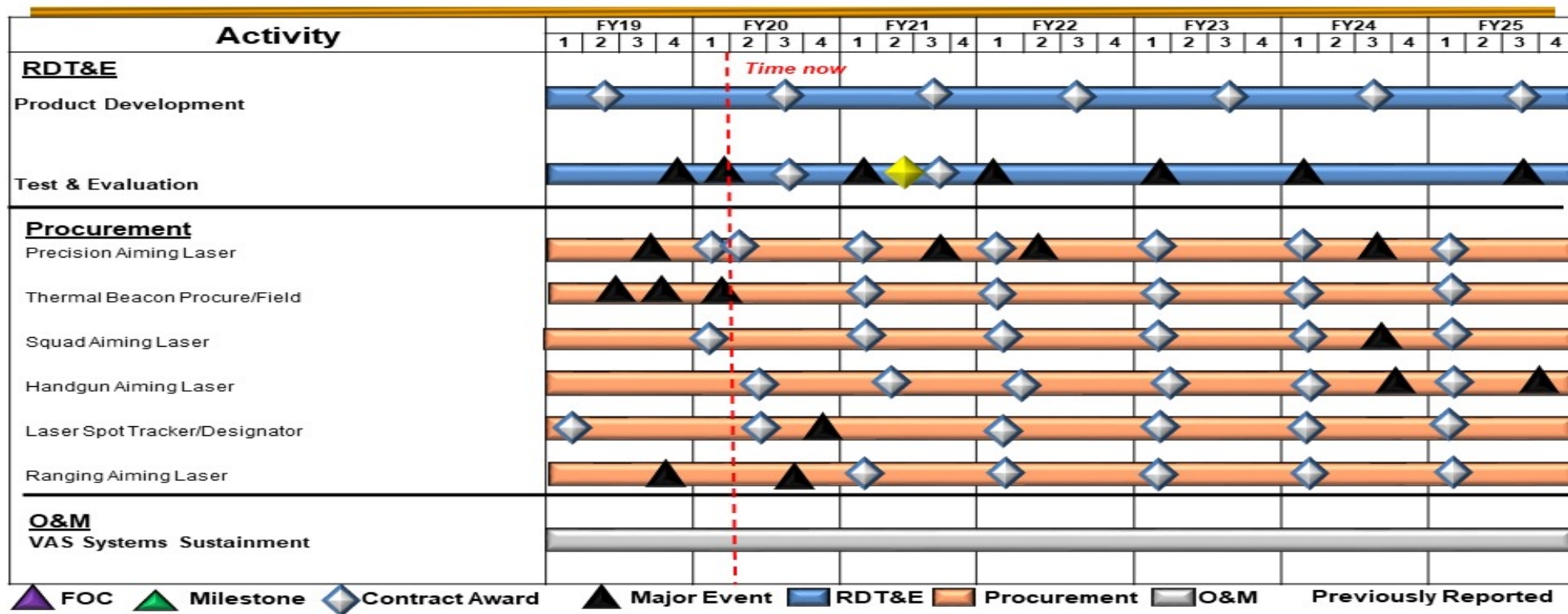
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S395 / Visual Augmentation, Lasers and
Sensor Systems

Visual Augmentation Systems Laser PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

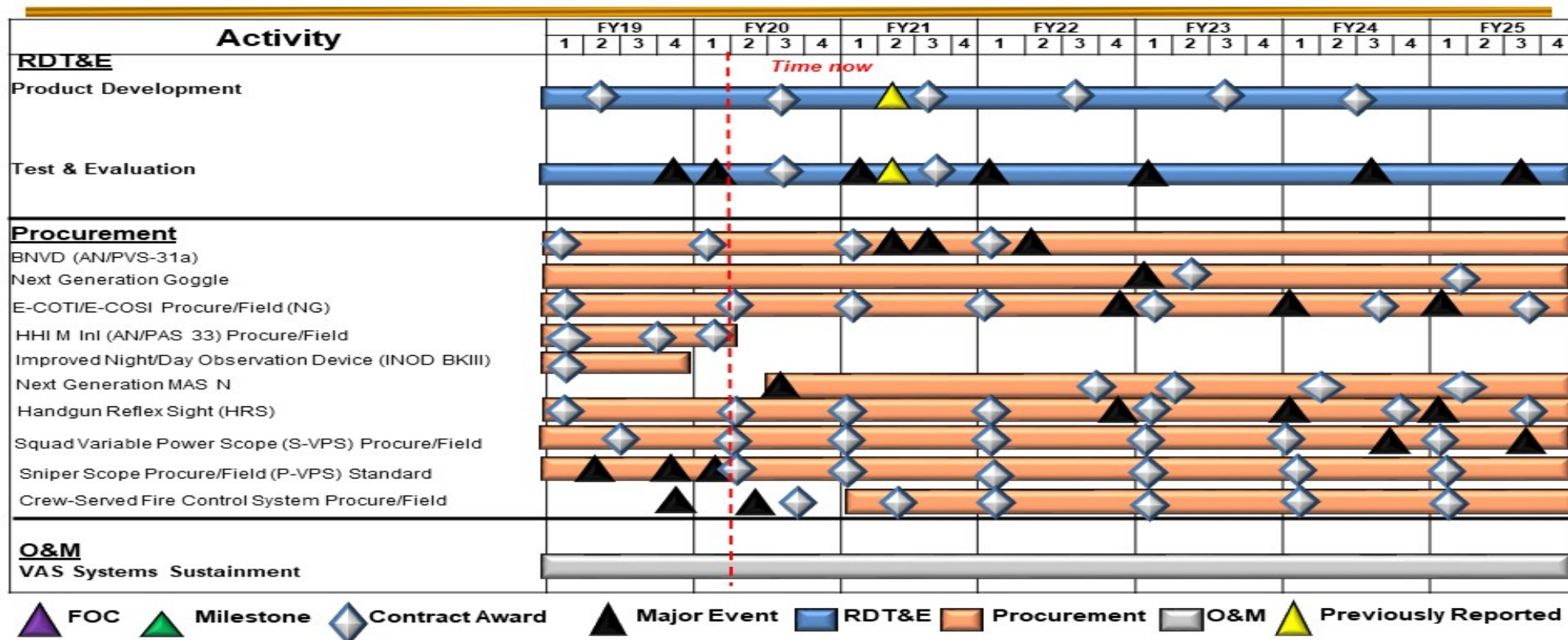
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S395 / Visual Augmentation, Lasers and
Sensor Systems

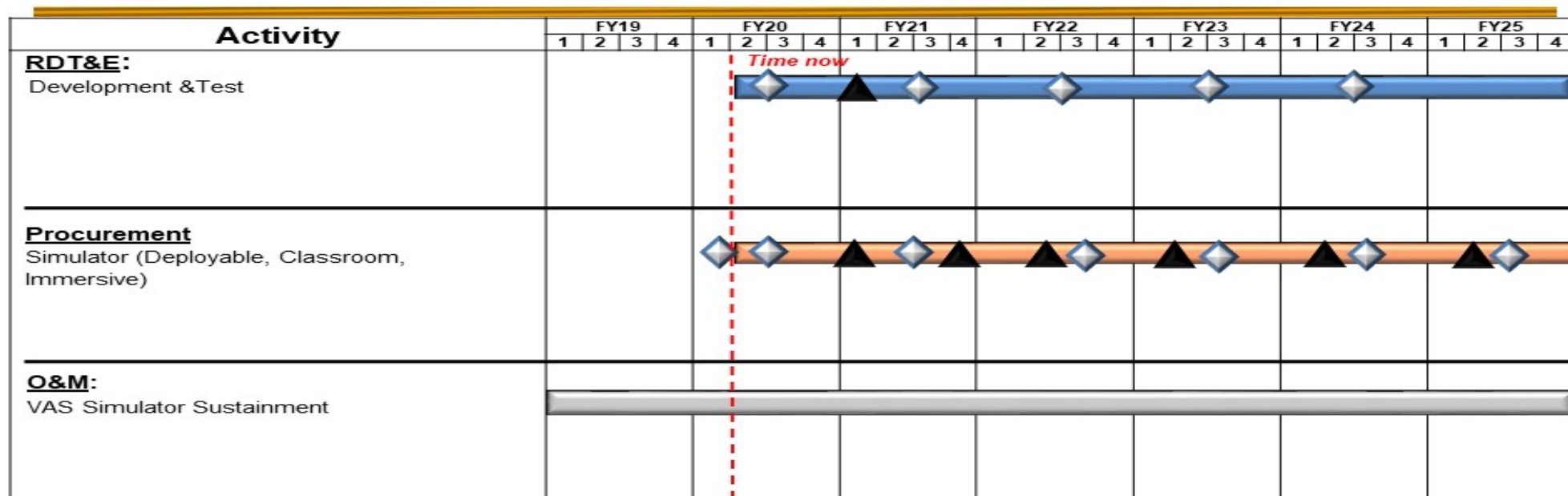
Visual Augmentation Systems Optic PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S395 / Visual Augmentation, Lasers and Sensor Systems	

Visual Augmentation Systems Simulator PEO-Managed Schedule



 FOC
  Milestone
  Contract Award
  Article Delivery
  RDT&E
  Procurement
  O&M
  Previously Reported

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S395 / <i>Visual Augmentation, Lasers and Sensor Systems</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Visual Augmentation Systems</i>				
VAS Optic Development and Test	1	2019	4	2025
VAS Laser Development and Test	1	2019	4	2025
VAS Simulator Development and Test	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S700 / Communications Equipment and Electronics Systems			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S700: Communications Equipment and Electronics Systems	30.937	13.340	17.359	26.435	-	26.435	21.709	21.250	21.720	22.154	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for communication systems to meet emergent requirements to support Special Operations Forces (SOF). Communications Equipment and Electronics Systems is a continuing effort to develop smaller, lighter, more efficient and more robust SOF Command, Control, Communications, and Computer (C4) capabilities.

USSOCOM's C4 systems comprise an integrated network of systems providing positive command and control and the timely exchange of information to all organizational echelons. The C4 systems that support this new architecture employ the latest standards and technology by transitioning from separate systems to full integration within the Global Information Grid (GIG). The GIG is a multitude of existing and projected national assets that allows SOF elements to operate with any force combination in multiple environments.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Satellite Deployable Node (SDN)	9.241	9.327	10.641	-	10.641
Description: SDN is a family of deployable, super high frequency, multi-band, Satellite Communications (SATCOM) systems providing the transport path for high-capacity, voice, data, Video Teleconferencing (VTC), and Full Motion Video (FMV) at all levels of classification. It consists of SDN subprograms, transport for intelligence variants, technology insertions and Capital Equipment replacement.					
FY 2020 Plans: Continue assessments, tests and evaluations for wide-band Communications-On-The-Move (COTM) maritime, ground mobile and airborne technologies. Complete assessments of reduction of Size, Weight and Power (SWAP) and SDN wireless network capabilities. Continue Evolutionary Technology Insertion (ETI) integration. Continue evaluation of High Throughput Satellite (HTS) constellations and terminals. Continue evaluation of resiliency of systems in a degraded communication environment. Continue the integration and testing of mobile technologies.					
FY 2021 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020			
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S700 / Communications Equipment and Electronics Systems				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continues assessments, tests and evaluations for wide-band COTM maritime, ground mobile and airborne technologies. Continues ETI integration. Continues evaluation of HTS constellations and terminals. Continues evaluation of resiliency of systems in a degraded communication environment. Completes the integration and testing of mobile technologies.						
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$1.314 million supports COTM and new SATCOM constellation terminal certifications.						
Title: Civil Information Management (CIM)		-	0.016	0.010	-	0.010
Description: The CIM Data Processing System (CIMDPS) is an automation system that assists active Civil Affairs (CA) and others engaged in civil-military operations to collect, process, analyze, maintain, mine, and deliver Civil Information and analysis products to support the Next Generation CIMDPS Systems.						
FY 2020 Plans: Continue follow-on development and integration of the Next Generation CIMDPS Hardware platform in support of CA communities.						
FY 2021 Base Plans: Continues follow-on development and integration of the Next Generation CIMDPS Hardware platform in support of CA communities.						
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.006 million is due to minor adjustments.						
Title: Special Communications (SPCOM) Enterprise program		4.099	8.016	11.201	-	11.201
Description: SPCOM includes organizations, practices, processes, services, networks, systems and subsystems that manage and provide clandestine exchange of information between elements (field-to-field, field-to-base, base-to-field) for worldwide deployed SOF units, often in austere environments with heavy adversarial monitoring. Acquisition efforts are structured for rapid, tailored development to counter adaptable emerging threats in all theaters of SOF sensitive missions.						
FY 2020 Plans: Continue segment development for the SPCOM enterprise; develops means and methods to provide near-term impact to operators. Continue development of anti-intrusion/anti-tamper capabilities. Continue extensive						

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S700 / <i>Communications Equipment and Electronics Systems</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
vulnerability assessments plus independent verification and validation. Acquisition efforts are structured for rapid, tailored development to counter adaptable emerging threats in all theaters of SOF sensitive missions. <i>FY 2021 Base Plans:</i> Continues segment development for the SPCOM enterprise; develops means and methods to provide near-term impact to operators. Continues development of anti-intrusion/anti-tamper capabilities. Continues extensive vulnerability assessments plus independent verification and validation. Acquisition efforts are structured for rapid, tailored development to counter adaptable emerging threats in all theaters of SOF sensitive missions. <i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Increase of \$3.185 million will fulfill additional Theater Special Operations Commands (TSOC) area and mission-specific tailored requirements for low-signature, threat-mitigated, and sensitive missions.					
<i>Title:</i> Mission Command System Common Operational Picture (MCS/COP) <i>Description:</i> MCS/COP provides shared situational awareness for Special Operations Forces Commanders across all domains at the tactical, operational, and strategic levels. The MCS/COP delivers a near-real time operational understanding of the intelligence and operational environment to support decision making. <i>FY 2021 Base Plans:</i> Begins rapid prototyping, product development, and operational testing and evaluation based upon dynamic and emergent operational requirements. <i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Increase of \$4.583 million is due to rapid development of a modular open systems architecture, which can fully integrate with Global Command and Control System (GCCS) - Joint, Distributed Common Ground Surface System (DCGS) - SOF Advanced Analytics, and the Tactical Assault Kit system.	-	-	4.583	-	4.583
Accomplishments/Planned Programs Subtotals	13.340	17.359	26.435	-	26.435

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0204WARRIOR: <i>Warrior Systems <\$5M</i>	470.285	335.992	260.733	32.573	293.306	276.972	282.592	285.664	286.725	Continuing	Continuing
• PROC/0204OTHER: <i>OTHER ITEMS <\$5M</i>	131.905	103.938	96.333	0.984	97.317	79.598	73.139	54.838	70.984	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command							Date: February 2020	
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>			Project (Number/Name) S700 / <i>Communications Equipment and Electronics Systems</i>	

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Remarks											

D. Acquisition Strategy

SDN is a fielded program with Evolutionary Technology Insertions (ETI) into all variants: Heavy, Medium, and Light, wide-band COTM, and Airborne Intelligence Surveillance Reconnaissance-Transport variants. Commercial and government agency sources will be leveraged for required certifications, functional and operational tests, and acceptance support.

CIM has an evolutionary acquisition strategy to enhance its capability to meet the CA community's emerging requirements.

SPCOM is an evolutionary technology insertions effort to provide and support multiple field mission sets fully integrated with secure transports for complete end-to end capabilities. In particular, rapid, phased prototyping is prioritized to both develop operationally-relevant prototypes but also to be flexible and agile in ensuring countermeasures against dynamically adapting special communication threats in all theaters. Commercial and government agency sources will be leveraged for required certifications, functional and operational tests, and acceptance support.

MCS/COP employs an evolutionary strategy to incorporate the latest standards and technology in a next generation enterprise information system. Commercial and government agency sources will be leveraged for required certifications, system level integration, functional, and operational testing and evaluations.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S700 / Communications Equipment and Electronics Systems					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Satellite Deployable Node (SDN) Development	Various	Various : Various	6.962	4.520	Dec 2018	7.040	Mar 2020	5.321	Dec 2020	-		5.321	Continuing	Continuing	-
Civil Information Management Data Processing System (CIMDPS) Development	PO	SOF AT&L -KS : MACDILL AFB	1.795	-		0.016	Mar 2020	0.010	Mar 2021	-		0.010	Continuing	Continuing	-
Special Communications (SPCOM) Enterprise Capability Development	TBD	Various : Various	12.145	2.954	Mar 2019	6.650	Mar 2020	9.330	Mar 2021	-		9.330	Continuing	Continuing	-
SPCOM Technology Vulnerability Assessments	MIPR	MITRE : Bedford, MA	2.210	0.889	Dec 2018	1.026	Dec 2019	1.423	Dec 2020	-		1.423	Continuing	Continuing	-
Mission Command System Common Operational Picture (MCS/COP)	C/Various	Various : Various	-	-		-		2.292	Jan 2021	-		2.292	Continuing	Continuing	-
Subtotal			23.112	8.363		14.732		18.376		-		18.376	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SDN Market Research Evaluation and Testing	Various	Various : Various	6.440	4.721	Feb 2019	2.287	Apr 2020	5.320	Feb 2021	-		5.320	Continuing	Continuing	-
SPCOM Independent Verification and Validation	MIPR	MITRE : Bedford, MA	1.385	0.256	Dec 2018	0.340	Dec 2019	0.448	Dec 2020	-		0.448	Continuing	Continuing	-
Mission Command System Common Operational Picture (MCS/COP)	C/Various	Various : Various	-	-		-		2.291	Jan 2021	-		2.291	Continuing	Continuing	-
Subtotal			7.825	4.977		2.627		8.059		-		8.059	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			30.937	13.340		17.359		26.435		-		26.435	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command							Date: February 2020			
Appropriation/Budget Activity 0400 / 7			R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems			Project (Number/Name) S700 / Communications Equipment and Electronics Systems				
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

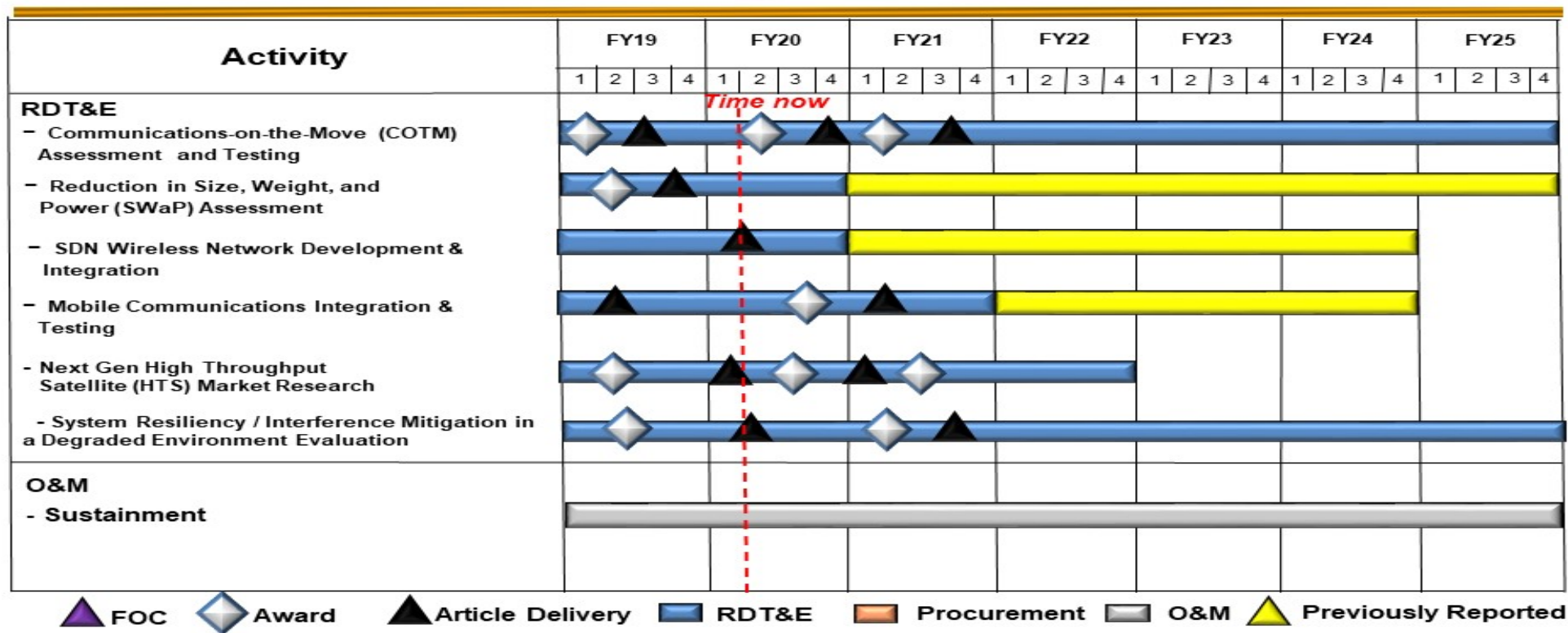
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S700 / Communications Equipment and Electronics Systems

Satellite Deployable Node (SDN) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

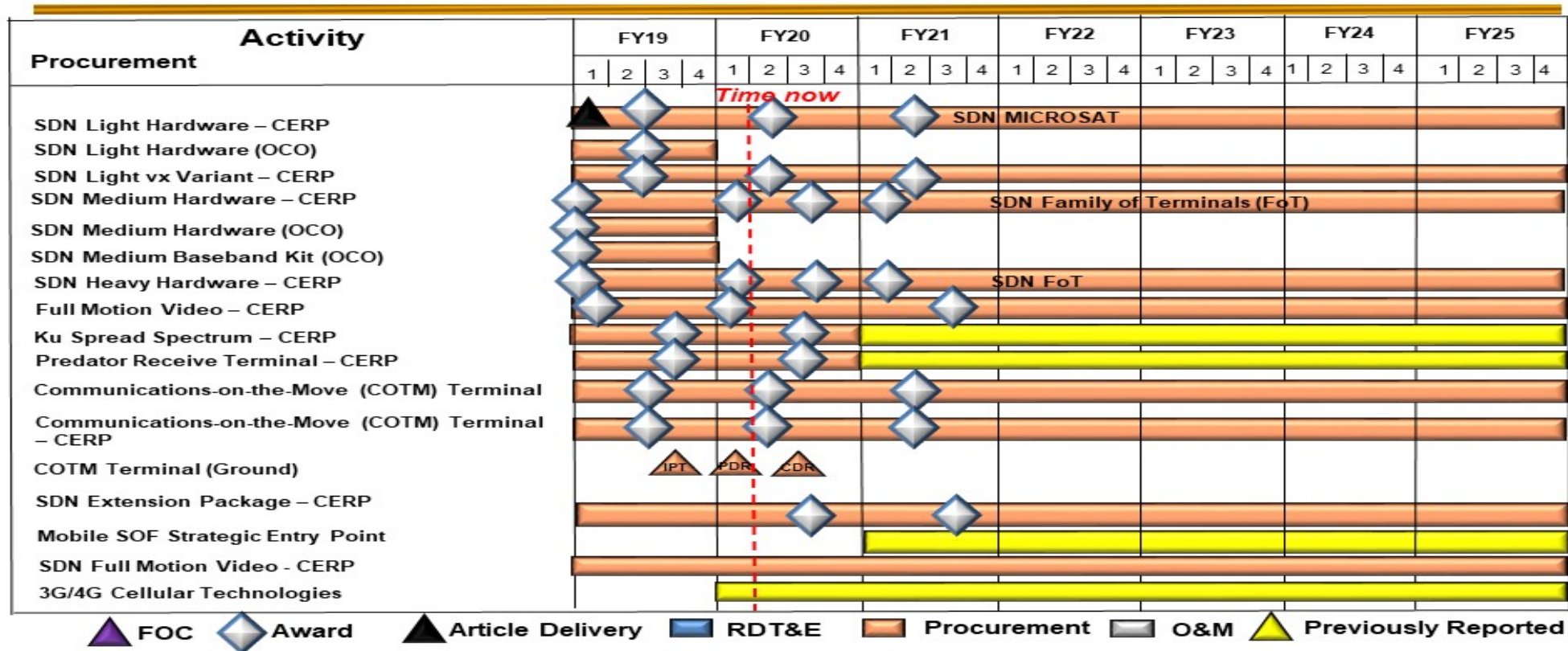
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S700 / Communications Equipment and Electronics Systems

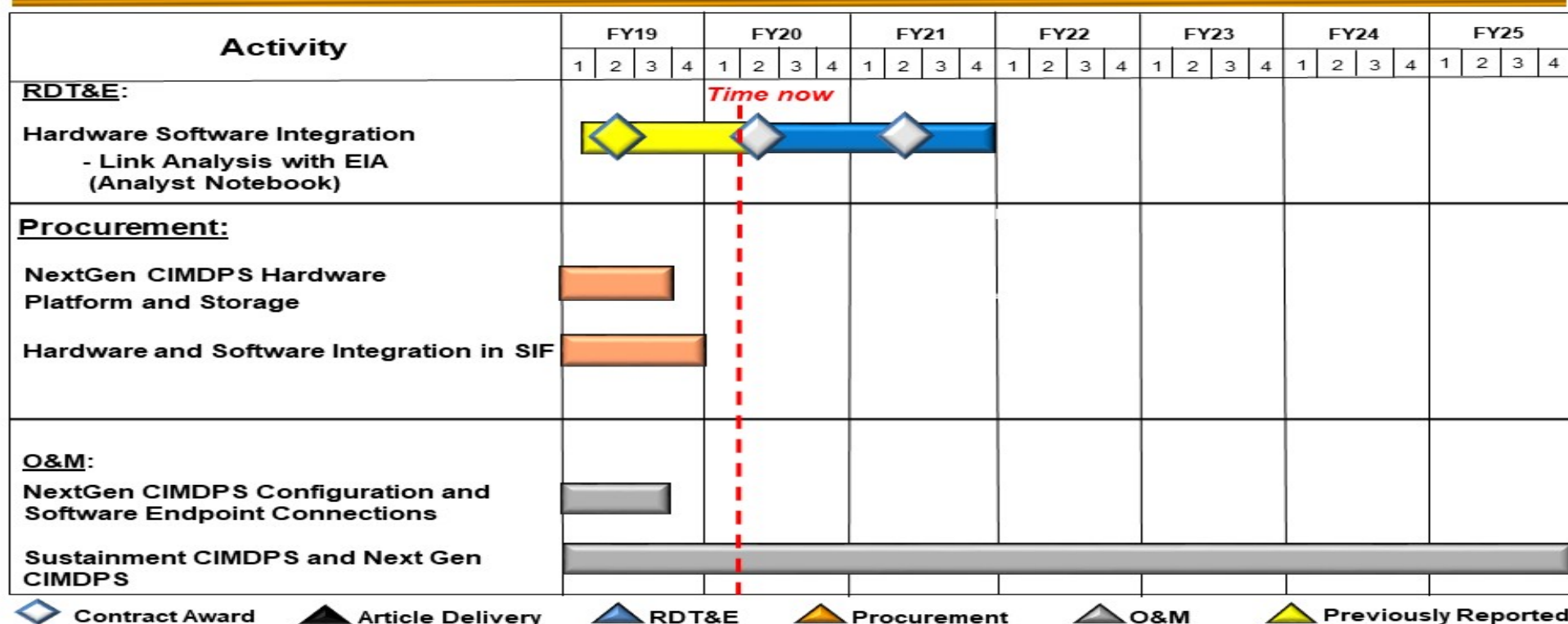
Satellite Deployable Node (SDN) PEO Managed Schedule (con't)



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems		Project (Number/Name) S700 / Communications Equipment and Electronics Systems	

Civil Information Management Data Processing System (CIMDPS) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

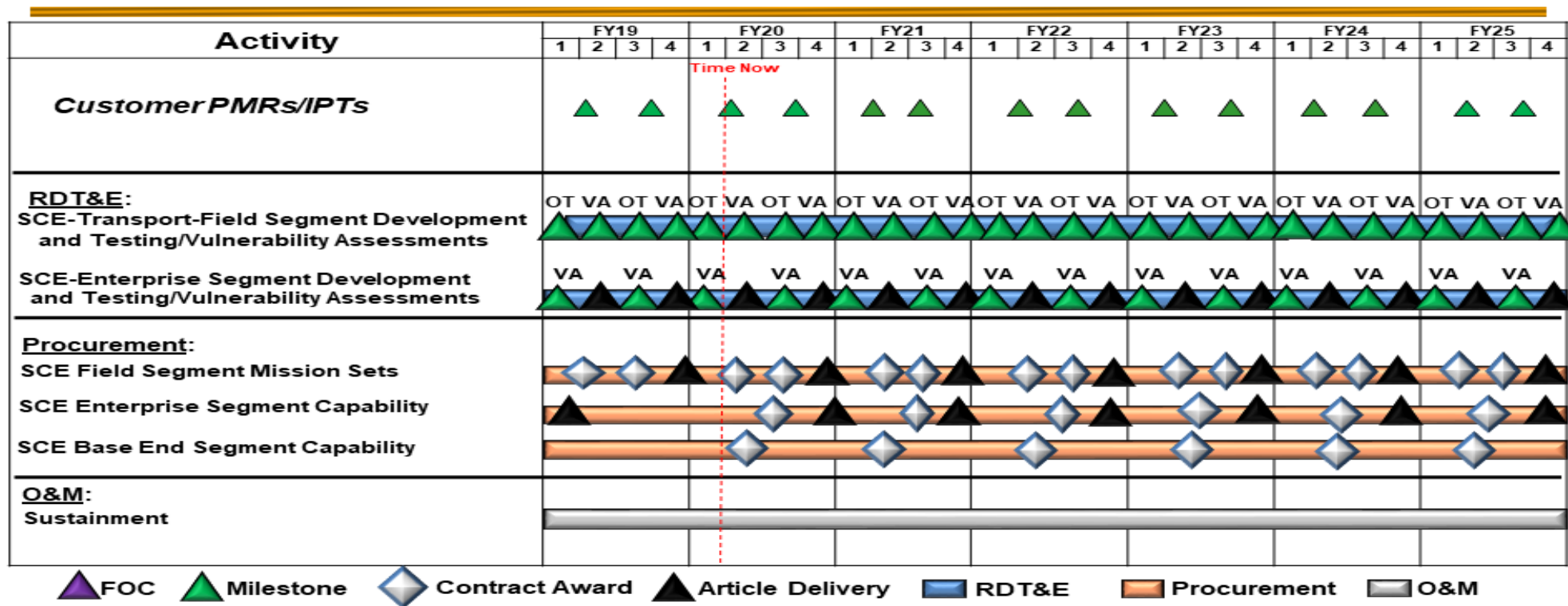
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S700 / Communications Equipment and Electronics Systems

Special Communications Enterprise (SCE) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

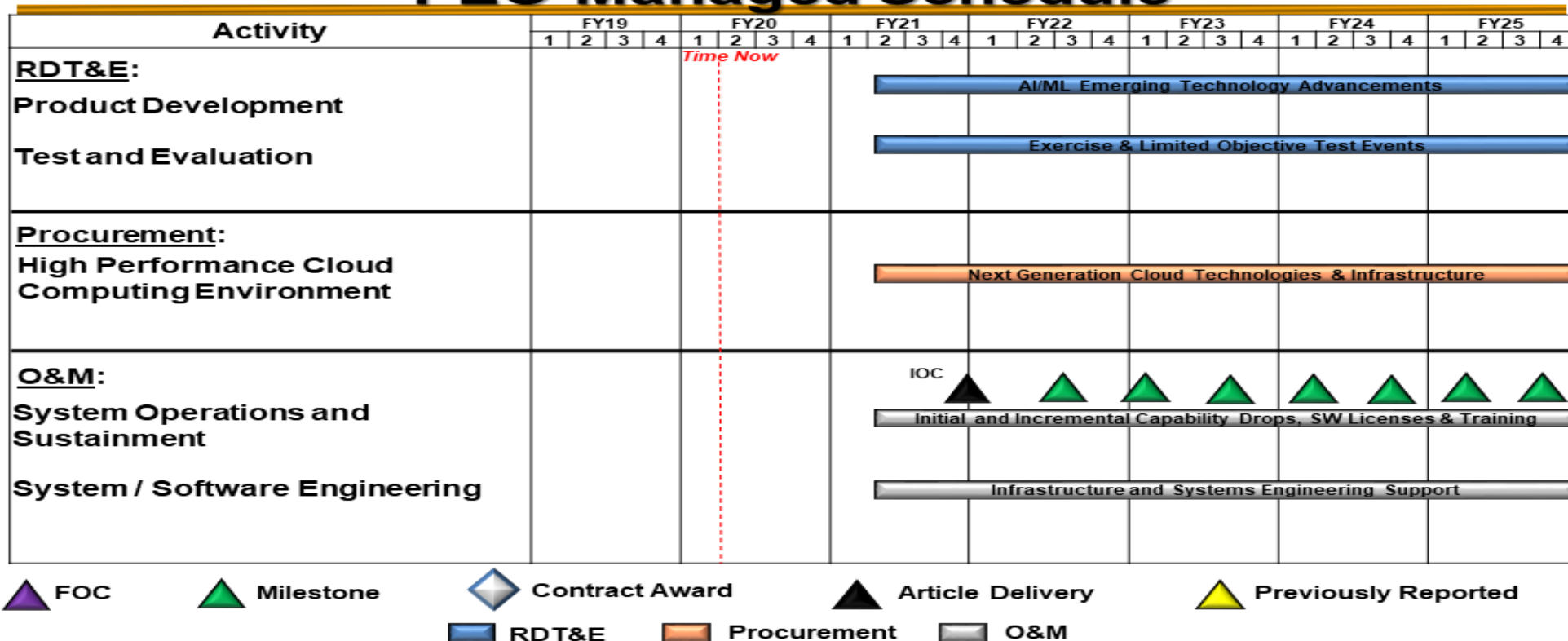
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S700 / Communications Equipment and
Electronics Systems

Mission Command System/ Common Operational Picture (MCS/COP) PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) <i>S700 / Communications Equipment and Electronics Systems</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>SOF Deployable Node (SDN)</i>				
Communications-on-the-Move (COTM) Assessment & Testing	1	2019	4	2025
Assess Reduction in Size, Weight, and Power (SWaP)	1	2019	4	2020
SDN Wireless Network Development & Integration	1	2019	4	2020
Mobile Communication Integration & Testing	1	2019	4	2021
Next Generation High Throughput Satellite Market Research	1	2019	4	2022
Evaluate System Resiliency / Interference Mitigation in Degraded Communications Environment Evaluation	1	2019	4	2025
<i>Civil Information Mmanagement (CIM)</i>				
Hardware Software Integration	2	2020	4	2021
<i>Special Communications (SPCOM) Enterprise Program</i>				
Transport - Field Segment Kit Development and Testing / Vulnerability Assessments	1	2019	4	2025
Enterprise Segment Development and Testing / Vulnerability Assessments	1	2019	4	2025
<i>Mission Command System Common Operational (MCS/COP)</i>				
Product Development	2	2021	4	2025
Test and Evaluation	2	2021	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S710 / Tactical Systems Development			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S710: Tactical Systems Development	3.700	4.073	2.813	3.344	-	3.344	3.103	3.169	3.242	3.305	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project provides for development, testing, and integration of specialized automation equipment to meet the unique requirements of Special Operations Forces (SOF). Specialized automation equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. These operations are generally conducted in harsh environments, for unspecified periods and in locations requiring small unit autonomy. SOF must infiltrate by land, sea, and air to conduct unconventional warfare, direct action, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Tactical Local Area Network (TACLAN) Suites								4.073	2.813	3.344	-	3.344
Description: TACLAN provides SOF operational commanders and forward deployed forces advanced networking, automated data processing, storage, and display capabilities to support situational awareness, mission planning and execution, and command and control of forces. The TACLAN consists of Suites, Mission Planning Kits, Field Computing Devices (FCD), and tactical work stations.												
FY 2020 Plans: Continue integration and testing of Evolutionary Technology Insertions (ETI) for TACLAN FCD and Network Management Suite upgrades. Continue Mobile Edge Computing capabilities for integration and assessment in the TACLAN Family of Systems. Completes the development of Tactical Secret Networking capabilities for integration and assessment.												
FY 2021 Base Plans: Continues integration and testing of ETIs for TACLAN FCD and Network Management Suite upgrades. Continues the development of Mobile Edge Computing capabilities for integration and assessment in the TACLAN Family of Systems.												
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.531 million supports integration and testing for increased modularity in TACLAN FCD upgrades.												
Accomplishments/Planned Programs Subtotals								4.073	2.813	3.344	-	3.344

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) S710 / <i>Tactical Systems Development</i>		

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PROC/0204OTHER: OTHER ITEMS <\$5M	131.905	103.938	96.333	0.984	97.317	79.598	73.139	54.838	70.984	Continuing	Continuing

Remarks

D. Acquisition Strategy

The TACLAN evolutionary acquisition strategy includes the use of commercial and government agency sources, that will be leveraged for required certifications, functional and operational test, and acceptance support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S710 / <i>Tactical Systems Development</i>
--------------------------------------------------	-----------------------------------------------------------------------------------	----------------------------------------------------------------------------

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TACLAN FCD Upgrades	Reqn	Raven Tek : Tampa, FL	1.600	2.400	Jun 2019	0.863	Mar 2020	1.500	Mar 2021	-		1.500	Continuing	Continuing	-
Network Management Suite Upgrades	Reqn	Raven Tek : Tampa, FL	2.100	1.073	Mar 2019	1.000	Mar 2020	1.294	Apr 2021	-		1.294	Continuing	Continuing	-
Edge Computing	Reqn	Raven Tek : Tampa, FL	0.000	0.100	Jun 2019	0.450	Jun 2020	0.550	Jun 2021	-		0.550	Continuing	Continuing	-
Tactical Secret Networking	Reqn	Raven TEK : Tampa, FL	-	0.500	Aug 2019	0.500	Apr 2020	-		-		-	Continuing	Continuing	-
Subtotal			3.700	4.073		2.813		3.344		-		3.344	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.700	4.073		2.813		3.344		-		3.344	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

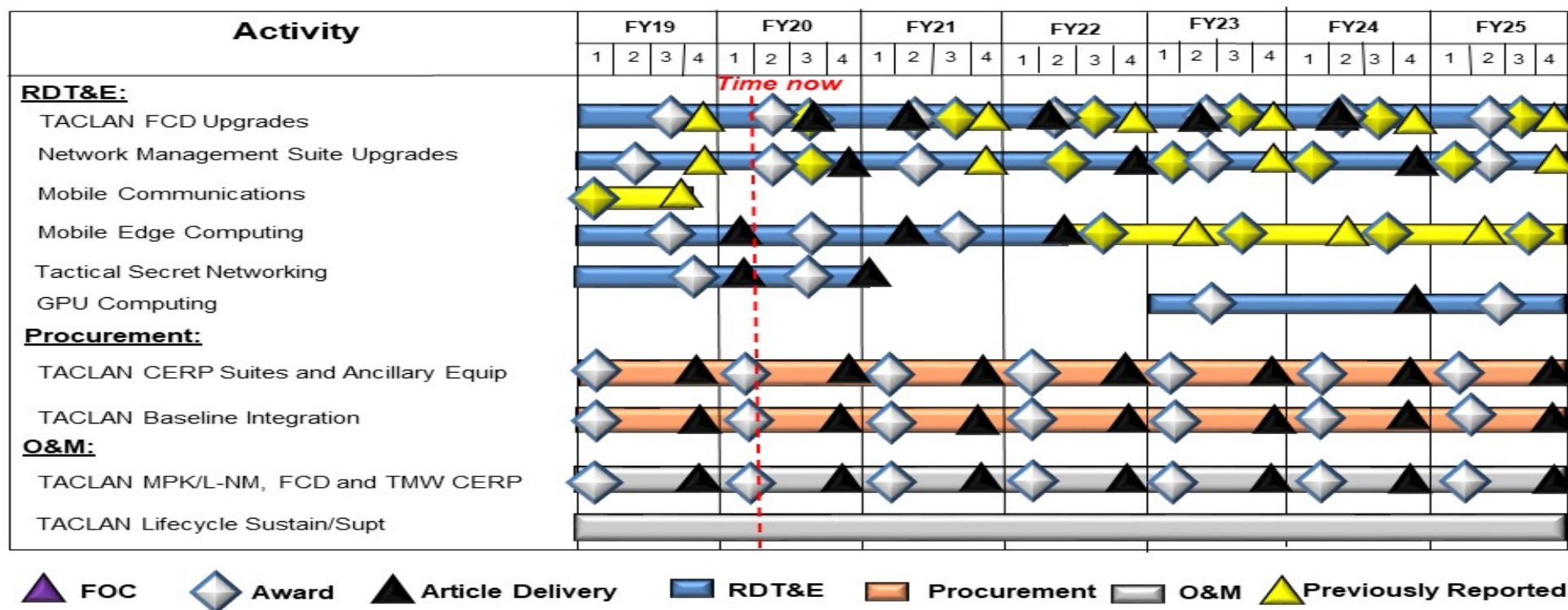
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S710 / Tactical Systems Development

Tactical Local Area Network (TACLAN) PEO Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S710 / <i>Tactical Systems Development</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Tactical Local Area Network (TACLAN) Suites</i>				
TACLAN FCD Upgrades	1	2019	4	2025
Network Management Suite Upgrades	1	2019	4	2025
Mobile Edge Computing	1	2019	2	2022
Tactical Secret Networking	1	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>				Project (Number/Name) <i>S725 / Tactical Radio Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S725: <i>Tactical Radio Systems</i>	26.008	4.479	11.315	7.940	-	7.940	2.570	2.631	2.699	2.753	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project is for the development of all SOF tactical radio programs. Tactical Radios provide the critical Command, Control, and Communications (C3) link between SOF Commanders and SOF Teams conducting operational missions and training exercises. They also provide interoperability with all Services, various agencies of the U.S. Government, Air Traffic Control, commercial agencies, and allied foreign forces. Tactical Radios rapidly and seamlessly establish and maintain mobile and fixed Command and Control (C2) communications between operational elements and higher echelon headquarters, allowing SOF to operate with any force combination in multiple environments.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: SOF Tactical Communications (STC)	4.408	10.642	7.253	-	7.253
Description: STC consists of Next-Generation SOF Communication Systems which replace most of the currently fielded SOF tactical radios. Capabilities include Real Time, Hostile and Friendly Force Information; Line of Sight (LOS) and Beyond LOS (BLOS) Communications; and access to Situational Awareness in the form of Intelligence Inputs, Broadcasts, and Networks.					
FY 2020 Plans: Continue A-Tactical Assault Kit (ATAK) development and integration. Continue Software Development Kit (SDK) and complete Wizard and Intelligence, Surveillance, and Reconnaissance (ISR) Mission Module (MM) development. Begin Engineering Change Proposal (ECP) for Next Generation Handheld (NGHH). Complete Next Generation Manpack (NGMP) test and evaluation. Continue High Frequency (HF) platform modernization incorporating two systems into a single Government-owned form factor that provides standard, and Low Probability Intercept/Detection (LPI/D) capabilities.					
FY 2021 Base Plans: Completes ATAK development and integration. Continues SDK Mission Module (MM) development. Continues ECP for NGHH. Continues High Frequency (HF) platform modernization incorporating two systems into a single Government-owned form factor that provides standard, anti-jam, and Low Probability Intercept/Detection (LPI/D) capabilities.					
FY 2020 to FY 2021 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) <i>S725 / Tactical Radio Systems</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Decrease of \$3.389 million due to completion of ISR MM development and associated software development kit.					
Title: Blue Force Tracking (BFT)	0.071	0.673	0.687	-	0.687
Description: BFT is a family of devices used to remotely track and monitor SOF unit personnel. The capability enhances C2, threat warning, force protection, situational awareness, combat search and rescue, counter-fratricide, and battlefield visualization. This capability is unique to SOF because it requires the devices to be lightweight, portable, secure with a Low Probability of Intercept/Low Probability of Detection.					
FY 2020 Plans: Continue development and test of new capabilities in BFT equipment.					
FY 2021 Base Plans: Continues development and test of new capabilities in BFT equipment.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.014 million to allow for rapid prototyping and additional product development focused on denied environments.					
Accomplishments/Planned Programs Subtotals	4.479	11.315	7.940	-	7.940

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0204WARRIOR: <i>Warrior Systems<\$5M</i>	470.285	335.992	260.733	32.573	293.306	276.972	282.592	285.664	286.725	Continuing	Continuing

Remarks

D. Acquisition Strategy

- STC is a Commercial-Off-The-Shelf (COTS)/Non-Development Item program with Evolutionary Technology Insertions (ETIs). Commercial and government agency sources will be leveraged for required certifications, functional and operational tests, and acceptance support.
- BFT is a fielded program with evolutionary technology insertions leveraging commercial and other government agency sources for required certifications, functional and operational tests, and technology updates.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S725 / <i>Tactical Radio Systems</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOF Tactical Communications Radio Development (STC)	MIPR	Various : Various	20.781	4.408	Jan 2019	10.642	Feb 2020	7.253	Mar 2020	-		7.253	Continuing	Continuing	-
Blue Force Tracking Development	MIPR	Various : Various	2.462	-		0.598	Nov 2019	0.612	Nov 2020	-		0.612	Continuing	Continuing	-
Subtotal			23.243	4.408		11.240		7.865		-		7.865	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
STC Testing	Option/ TBD	Various : Various	2.694	-		-		-		-		-	0.000	2.694	-
Blue Force Tracking Testing	MIPR	Various : Variuos	0.071	0.071	Dec 2019	0.075	Nov 2019	0.075	Nov 2020	-		0.075	Continuing	Continuing	-
Subtotal			2.765	0.071		0.075		0.075		-		0.075	Continuing	Continuing	N/A

			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			26.008	4.479		11.315		7.940		-		7.940	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

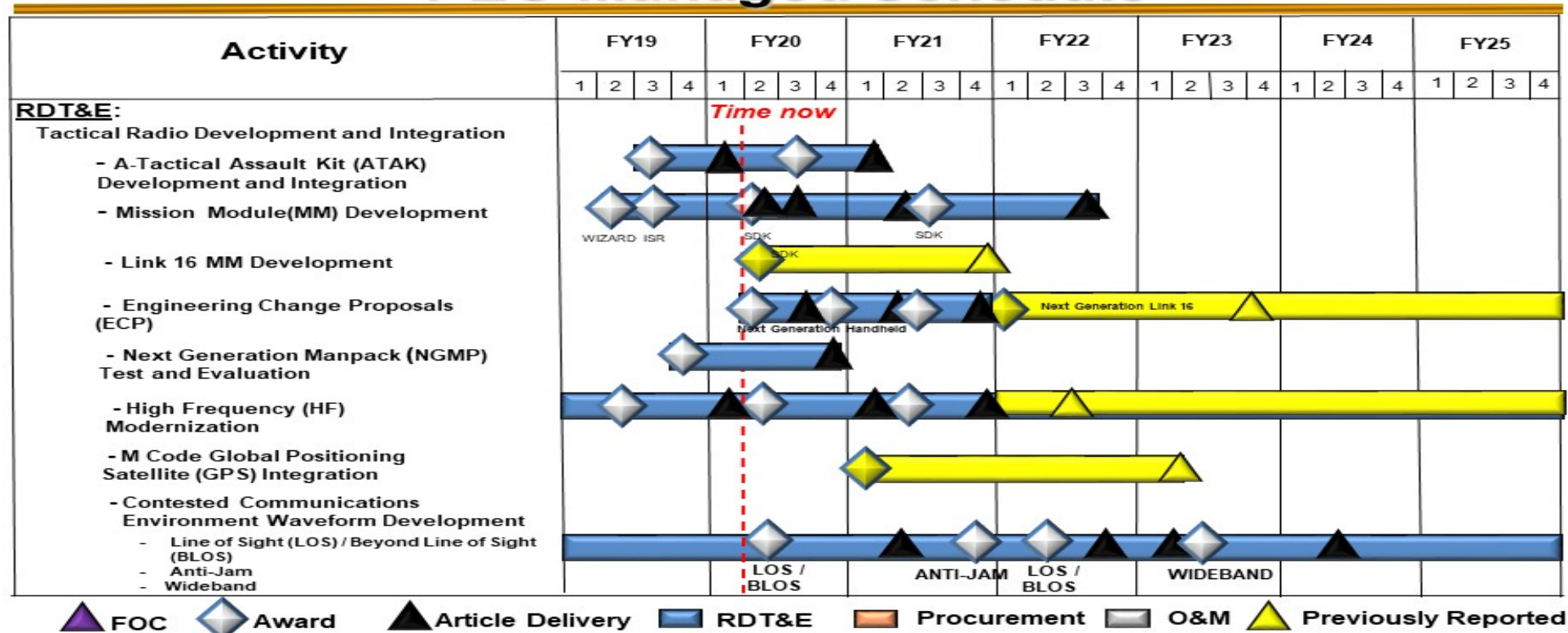
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S725 / Tactical Radio Systems

SOF Tactical Communications (STC)/ Next Generation Tactical Communications (NGTC) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

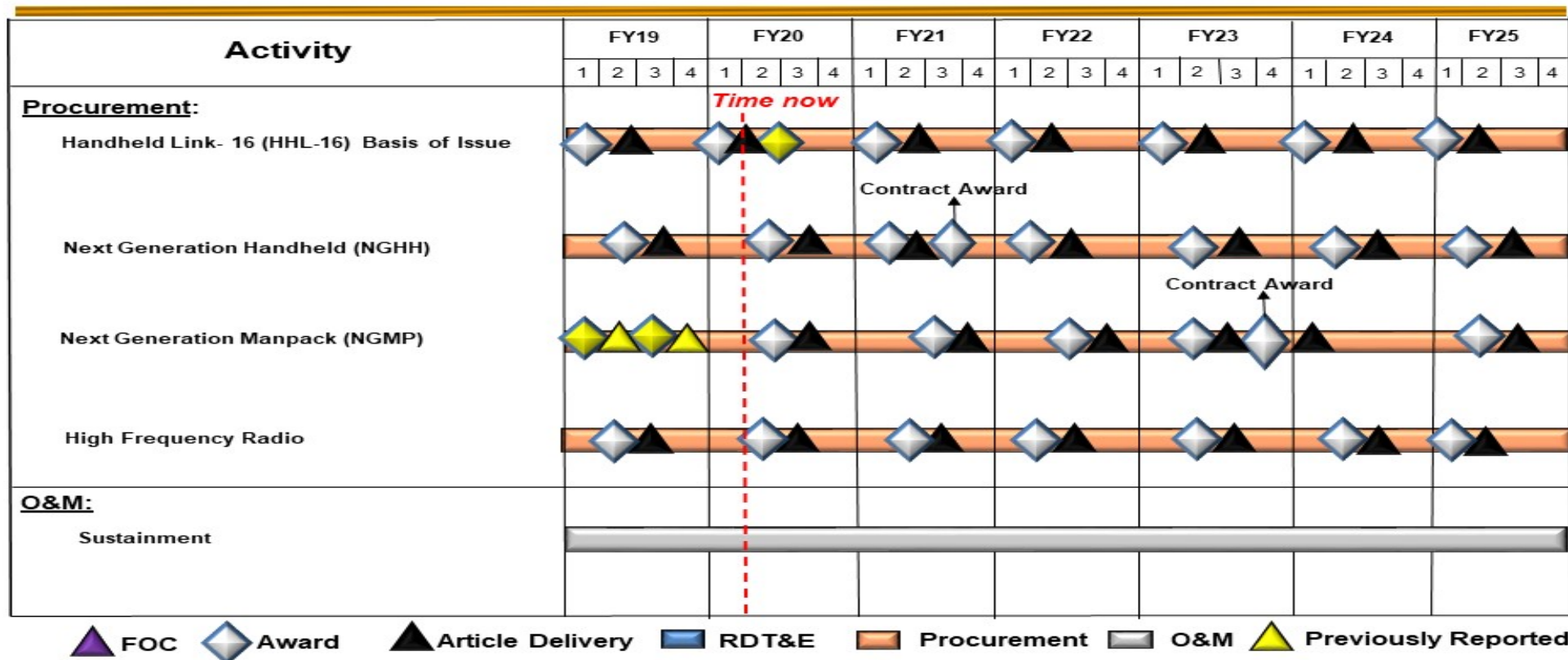
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S725 / Tactical Radio Systems

STC/NGTC PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

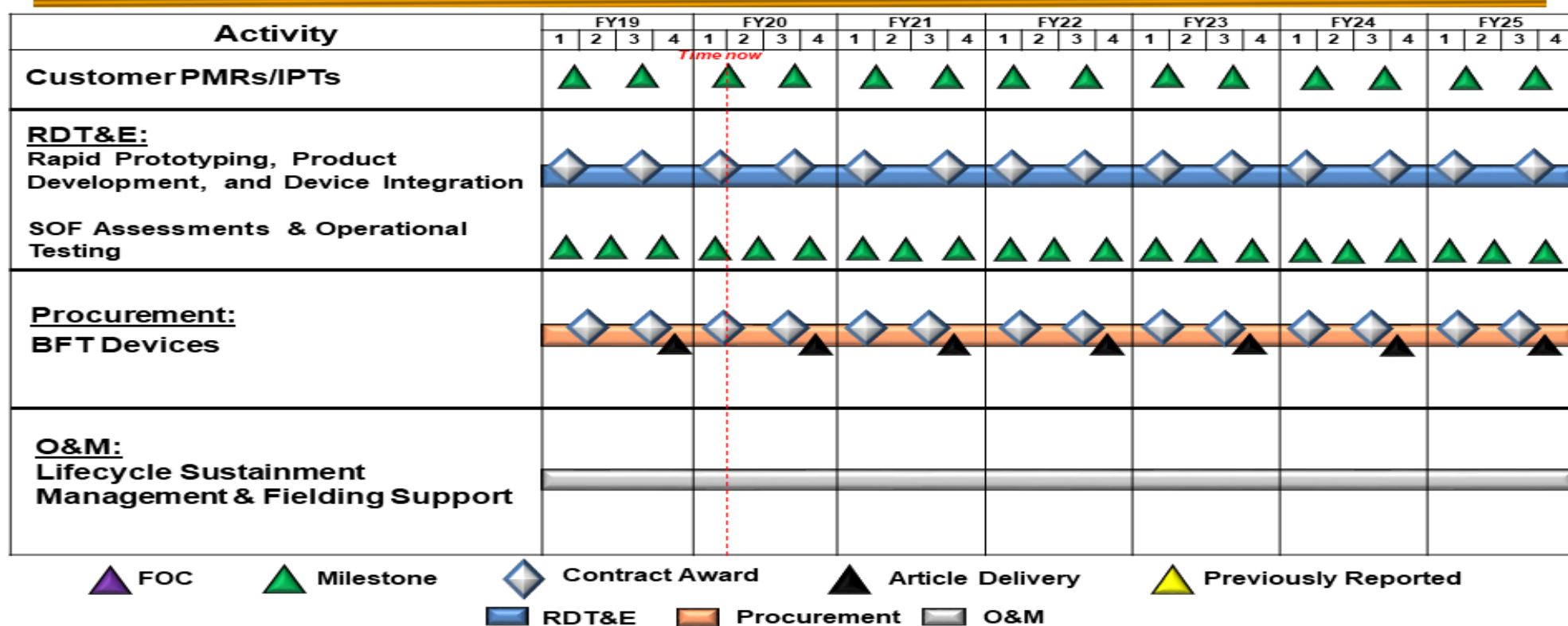
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S725 / Tactical Radio Systems

Blue Force Tracking (BFT) PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems	Project (Number/Name) S725 / Tactical Radio Systems	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>SOF Tactical Communications Radio</i>				
A-Tactical Assault Kit (ATAK) Development and Integration	3	2019	1	2021
Mission Module (MM) Development	2	2019	3	2022
Engineering Change Proposals (ECPs)	2	2020	4	2021
Next Generation (NGEN) Manpack (MP) Test and Evaluation	3	2019	4	2020
High Frequency (HF) Modernization	1	2019	4	2021
Contested Communications	1	2019	4	2025
<i>Blue Force Tracking</i>				
Rapid Prototyping, Product Development, and Device Integration	1	2019	4	2025
SOF Assessment & Operational Testing	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S800 / Munitions Advanced Development			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S800: Munitions Advanced Development	61.518	27.051	23.741	6.004	-	6.004	7.076	11.677	11.996	12.237	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project funds advanced engineering, operational system development and qualification efforts related to specialized munitions and equipment to meet the unique requirements of SOF.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Munitions Advanced Development								0.322	0.588	0.559	-	0.559
Description: The Munitions Advanced Development program provides for Insensitive Munitions (IM) technology development and evaluations that allow SOF munitions to pass testing which includes bullet impact, sympathetic detonation, fast cook off, slow cook off and shaped charge test. Testing is in accordance with the United States Special Operations IM Testing Plan. Munitions product improvements are tested in accordance with command priorities.												
FY 2020 Plans: Continue proof of concept development and IM testing on various munitions. Continue full scale testing to satisfy safety requirements in Military Standard 2105C (Department of Defense Test and Method Standard: Hazard Assessment Test for Non-Nuclear Munitions, 26 Sep 2006).												
FY 2021 Base Plans: Continues proof of concept development and IM testing on various munitions. Continues full scale testing to satisfy safety requirements in Military Standard 2105C (Department of Defense Test and Method Standard: Hazard Assessment Test for Non-Nuclear Munitions, 26 Sep 2006).												
FY 2020 to FY 2021 Increase/Decrease Statement: Net decrease of \$0.029 million is due to minor adjustments (-\$0.009 million) and funding was made available due to streamlining contract support efforts (-\$0.020 million).												
Title: Stand-Off Precision Guided Munitions (SOPGM)								9.245	-	3.155	-	3.155
Description: SOPGM provides for the integration and testing of service-common and recently developed precision guided munitions on SOF-unique platforms. This project received a congressional add in FY 2019.												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems		Project (Number/Name) S800 / Munitions Advanced Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2021 Base Plans: Begins the engineering, integration and testing for SOPGMs guidance and control upgrades.						
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$3.155 million to begin the engineering and integration for the munitions guidance and control upgrades.						
Title: Precision Strike Systems (PSS) Description: Guided Rocket Systems provides for the engineering, integration and testing of service-common and recently developed precision guided munitions on SOF-unique platforms. PSS is designated a Middle Tier Acquisition (MTA) program which uses the rapid prototyping pathway and is executing using existing contracts, government agencies, and new contract competitively selected as appropriate.		2.500	8.262	2.290	-	2.290
FY 2020 Plans: Continue the engineering, integration and testing of service-common and recently developed precision guided munitions on SOF-unique platforms.						
FY 2021 Base Plans: Continues the engineering, integration and testing of service-common and recently developed precision guided munitions on SOF-unique platforms.						
FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$5.972 million is due to planned completions of system test and certification, and intended transition to procurement funding of the munition for the medium range precision strike munition.						
Title: Counter Unmanned Aerial System (C-UAS) Description: SOF C-UAS enhances the SOF operator’s ability to detect, identify, classify, locate, track, deter, defeat and exploit unmanned system threats. The funding in this program supports a Family of Systems (FoS) design, development, integration, rapid prototyping and test of cutting edge C-UAS sensor integration technologies that delivers and integrates various detection sensor modalities including, but not limited to, passive sensors, Radio frequency (RF) detection, acoustic, Light Detection and Ranging (LiDAR), radar, and Electro-Optical and Infrared (EO/IR). C-UAS is designated a MTA program which uses the rapid prototyping pathway and is executed using existing contracts, government agencies, and new contract competitively selected as appropriate.		1.056	1.891	-	-	-
FY 2020 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command								Date: February 2020				
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>			Project (Number/Name) S800 / <i>Munitions Advanced Development</i>					
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue C-UAS System Integration Module (SIM) phase 2 prototype development and begin phase 3 integration of a High Velocity 40mm effector turret sensor. This capability provides kinetic Counter-Unmanned Aerial System (C-UAS) capabilities to the Warfighter.												
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Decrease of \$1.891 million due to completion of development and evaluation of High Velocity 40mm High Explosive Air Bursting Ammunition.												
Accomplishments/Planned Programs Subtotals								13.123	10.741	6.004	-	6.004
								FY 2019	FY 2020			
<i>Congressional Add:</i> SOPGM								13.928	13.000			
<i>FY 2019 Accomplishments:</i> Continue integration and testing of Small Glide Munition (SGM) on SOF UAS platforms.												
<i>FY 2020 Plans:</i> Continue SGM UAS integration (\$3.000 million) and begin SGM collaborative strike enhancement (\$10.000 million) for SOPGM.												
Congressional Adds Subtotals								13.928	13.000			
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• PROC/0203ORDN: <i>Ordnance Items <\$5M</i>	417.346	412.244	186.197	105.355	291.552	188.013	185.499	251.376	232.940	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Munitions Advanced Development: Munitions and packaging redesign shall take place within government laboratories, as well as in industry, depending on the munitions. IM solutions shall be tested on a small scale for proof of principle. Planned product improvements are tested at Army, Navy, and Air Force test centers leveraging mid-tier acquisition authorities and Other Transaction Authorities (OTAs).												
SOPGM: Integration and developmental testing of precision guided munitions will be conducted using government laboratories or industry partners depending on the munitions for various SOF platforms.												

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S800 / <i>Munitions Advanced Development</i>
<p>PSS: Integration and developmental testing of the launcher systems with follow-on government-led integration effort leveraging lessons learned from similar rapid integration efforts on other combat tested SOF platforms.</p> <p>Counter Unmanned Aerial System (C-UAS): SOF C-UAS acquisition strategy utilizes MTA rapid prototyping to develop and integrate various advancing sensors with kinetic and non-kinetic capabilities. SOF Operators require C-UAS capability in mounted, dismounted and expeditionary fixed-site form factors. SOF C-UAS collaborates with the Joint Services, Academia and other government agencies to maintain interoperability and cost effectiveness. SOF C-UAS will continue to leverage the SOF-to-Service transition of proven capabilities.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S800 / Munitions Advanced Development					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Stand-off Precision Guided Munitions (SOPGM) MQ-9 Laser Small Diameter Bomb (LSDB)/Small Diameter Bomb (SDB) II Weapon Mount Hardware Development & Integration	SS/ Various	General Atomics : NY	3.157	7.105	Dec 2018	-		-		-		-	0.000	10.262	-
SOPGM MQ-9 LSDB Software Development & Integration	SS/ Various	Boeing : MO	1.700	1.040	Feb 2019	-		-		-		-	0.000	2.740	-
SOPGM Small Glide Munition (SGM)/MQ-1C Integration Congressional Plus Up	C/Various	Dynetics : AL	6.633	1.636	Jan 2019	-		-		-		-	0.000	8.269	-
SOPGM SGM/MQ-9 Integration Congressional Plus Up	C/Various	Dynetics : AL	-	5.901	Jan 2019	-		-		-		-	0.000	5.901	-
SOPGM SGM/MQ-9 Integration Overseas Contingency Operations (OCO)	C/Various	Dynetics : AL	-	-		2.000	Feb 2020	-		-		-	0.000	2.000	-
SOPGM SGM Collaborative Strike Enhancement OCO	C/Various	Dynetics : AL	-	-		7.000	Feb 2020	-		-		-	0.000	7.000	-
SOPGM SGM Griffin Guidance Control Development and Integration	SS/ Various	Various : Various	-	-		-		3.155	Jan 2021	-		3.155	Continuing	Continuing	-
Counter Unmanned Aerial System (C-UAS) SIM Phase II: Prototype Development	C/Various	Night Vision Labs : Ft. Belvoir, VA	-	1.056	Feb 2019	1.891	Nov 2019	-		-		-	0.000	2.947	-
Precision Strike Prototypes for Demonstration and Assessment	C/Various	Various : Various	-	0.400	Feb 2019	8.262	Nov 2019	0.500	Nov 2020	-		0.500	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) S800 / <i>Munitions Advanced Development</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Strike Vehicle Mount and Engineering Assessment	C/Various	Various : Various	-	1.350	Feb 2019	-		1.000	Nov 2020	-		1.000	Continuing	Continuing	-
Prior Year	C/Various	Various : Various	36.541	-		-		-		-		-	0.000	36.541	-
Subtotal			48.031	18.488		19.153		4.655		-		4.655	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOPGM SGM Support Congressional Plus Up	C/Various	Dynetics : AL	4.754	3.115	May 2019	-		-		-		-	0.000	7.869	-
SOPGM SGM Support OCO	C/Various	Dynetics : AL	-	-		2.000	Mar 2020	-		-		-	0.000	2.000	-
Prior Year	C/Various	Various : Various	1.100	-		-		-		-		-	0.000	1.100	-
Subtotal			5.854	3.115		2.000		-		-		-	0.000	10.969	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOPGM MQ-9 LSDB/SDB II Test	SS/TBD	Boeing : MO	-	0.694	May 2019	-		-		-		-	0.000	0.694	-
SOPGM MQ-9 LSDB/SDB II Test OCO	SS/TBD	Boeing : MO	-	0.406	May 2019	-		-		-		-	0.000	0.406	-
SOPGM SGM Test Congressional Plus Up	C/Various	Dynetics : AL	4.998	-		-		-		-		-	0.000	4.998	-
SOPGM SGM/MQ-1C Test Congressional Plus Up	C/Various	Dynetics : AL	-	1.638	May 2019	-		-		-		-	0.000	1.638	-
SOPGM SGM/MQ-9 Integration Congressional Plus Up	C/Various	Dynetics : AL	-	1.638	Dec 2019	-		-		-		-	0.000	1.638	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160431BB / Warrior Systems				Project (Number/Name) S800 / Munitions Advanced Development					
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOPGM SGM/MQ-9 Integration OCO	C/Various	Dynetics : AL	-	-		1.000	May 2020	-		-		-	0.000	1.000	-
SOPGM SGM Collaborative Strike Enhancement OCO	C/Various	Dynetics : AL	-	-		1.000	May 2020	-		-		-	0.000	1.000	-
Munitions - Insensitive Munitions (IM) Evaluation	C/FFP	US Air Force Air Armaments Center : Eglin, AFB, FL	0.114	0.050	Dec 2018	0.060	Dec 2019	0.060	Dec 2020	-		0.060	Continuing	Continuing	-
Munitions - IM Testing	Allot	ARDEC : Picatinny Arsenal, NJ	0.613	0.227	Dec 2018	0.375	Dec 2019	0.269	Dec 2020	-		0.269	Continuing	Continuing	-
Munitions Advanced Development - Obtain Munitions Test Articles	C/FFP	General Dynamics : Canada	0.289	0.045	Dec 2018	0.153	Dec 2019	0.204	Dec 2020	-		0.204	Continuing	Continuing	-
Precision Strike Systems (PSS) Test	Allot	NSWC : Indian Head, MD	-	0.300	May 2019	-		0.400	May 2021	-		0.400	Continuing	Continuing	-
PSS Evaluation	Allot	Redstone : Various	-	0.450	May 2019	-		0.416	May 2021	-		0.416	Continuing	Continuing	-
Prior Year	C/Various	Various : Various	1.619	-		-		-		-		-	0.000	1.619	-
Subtotal			7.633	5.448		2.588		1.349		-		1.349	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			61.518	27.051		23.741		6.004		-		6.004	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

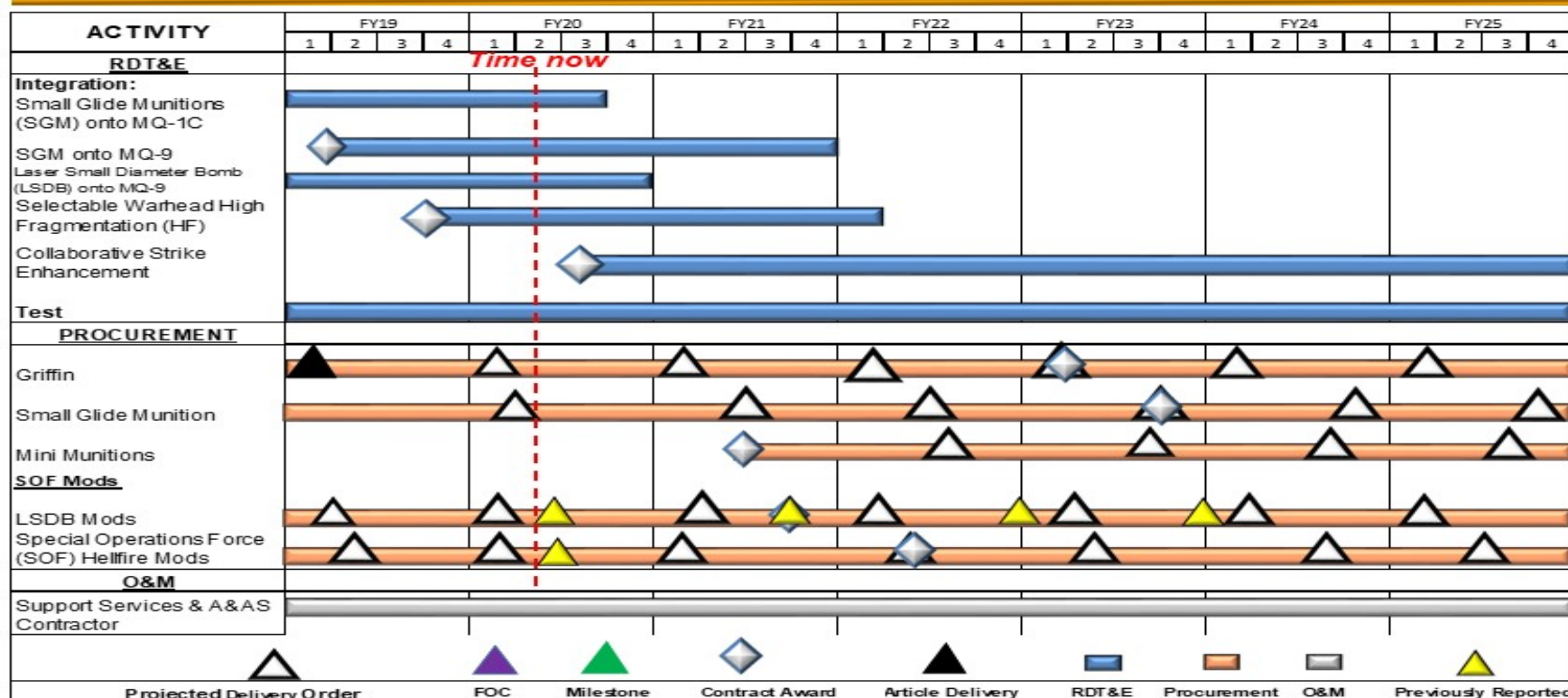
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S800 / Munitions Advanced Development

Stand-Off Precision Guided Munitions (SOPGM) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

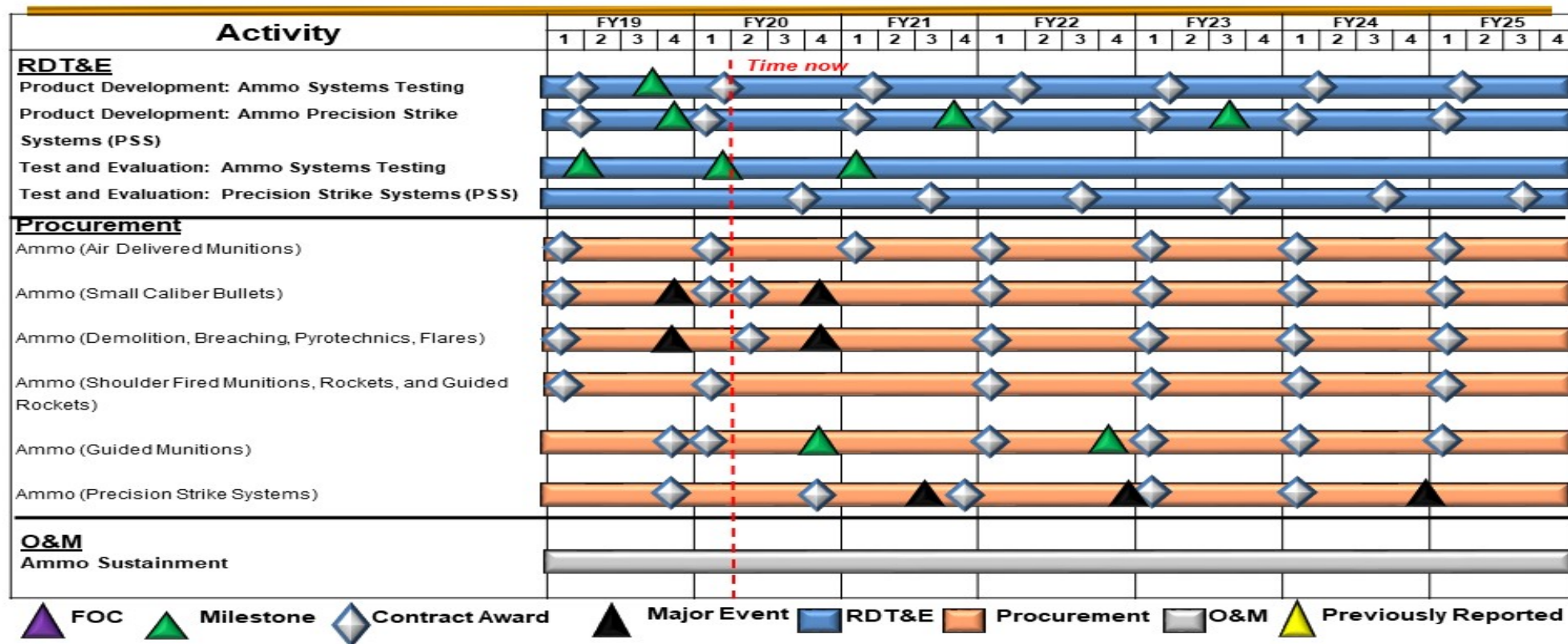
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S800 / Munitions Advanced Development

Munitions (Ordnance Items <\$5M) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

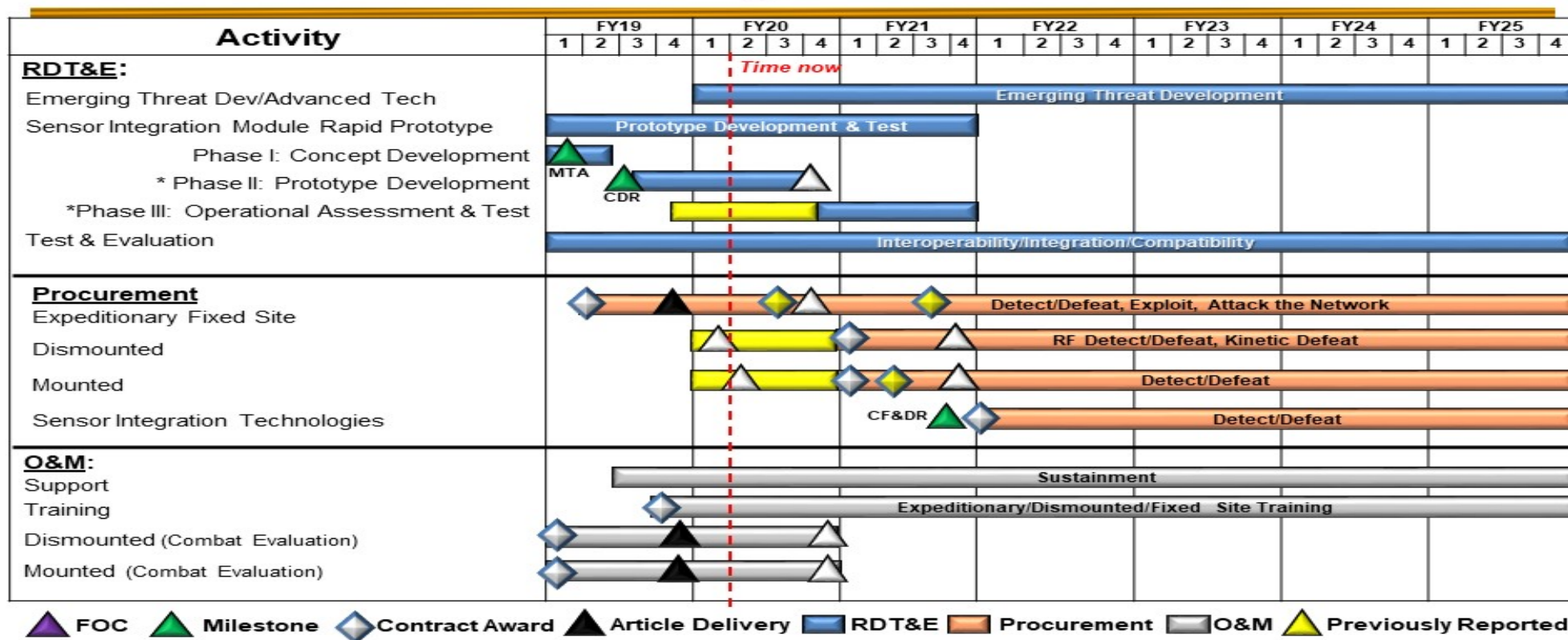
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160431BB / Warrior Systems

Project (Number/Name)
S800 / Munitions Advanced Development

Counter Unmanned Aerial Systems PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160431BB / <i>Warrior Systems</i>	Project (Number/Name) <i>S800 / Munitions Advanced Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Stand-off Precision Guided Munitions (SOPGM)</i>				
Small Glide Munitions (SGM) onto MQ-1C Integration	1	2019	3	2020
SGM onto MQ-9 Integration	2	2019	4	2021
Laser Small Diameter Bomb (LSDB) onto MQ-9 Integration	1	2019	4	2020
Selectable Warhead HellFire (HF) Integration	4	2019	1	2022
SGM Collaborative Strike Enhancement	2	2020	4	2025
SOPGM Testing	1	2019	4	2025
<i>Munitions (Ordnance Items)</i>				
Product Development: Ammo Systems Testing	1	2019	4	2025
Test and Evaluation: Ammo Systems Testing	1	2019	4	2025
Counter Unmanned Aerial Systems (C-UAS) SIM Phase II: Prototype Development	3	2019	4	2020
<i>Precision Strike System (PSS)</i>				
Product Development: Ammo Precision Strike System (PSS)	1	2019	4	2025
Test and Evaluation: PSS	1	2019	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160432BB / <i>Special Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	31.763	2.885	21.005	10.500	-	10.500	10.510	2.130	13.468	1.937	Continuing	Continuing
S500E: <i>Special Programs</i>	31.763	2.885	21.005	10.500	-	10.500	10.510	2.130	13.468	1.937	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	2.479	21.805	18.469	-	18.469
Current President's Budget	2.885	21.005	10.500	-	10.500
Total Adjustments	0.406	-0.800	-7.969	-	-7.969
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.800			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.495	-			
• SBIR/STTR Transfer	-0.089	-			
• Other Adjustments	-	-	-7.969	-	-7.969

Change Summary Explanation

Funding:

FY 2019: Net increase of \$0.406 million is due to transfer of funds to Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) programs (-\$0.089 million) and funding increase will be provided under separate cover (\$0.495 million).

FY 2020: Net decrease of -\$0.800 million is provided under separate cover.

FY 2021: Net decrease of -\$7.969 million is provided under separate cover.

Schedule: None.

Technical: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>											
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	53.657	44.970	42.377	19.154	5.000	24.154	22.252	24.152	26.058	25.859	Continuing	Continuing
S855: <i>Unmanned ISR</i>	53.657	44.970	42.377	19.154	5.000	24.154	22.252	24.152	26.058	25.859	Continuing	Continuing

A. Mission Description and Budget Item Justification

NOTE: Unmanned Intelligence, Surveillance, and Reconnaissance (ISR) includes the consolidation of Special Applications for Contingencies (SAFC) (previously Program Element (PE) 0304210BB); MQ-1 Unmanned Aerial Vehicle (UAV), (previously PE 0305219BB); MQ-8, (previously PE 0305231BB); RQ-11, UAV (previously PE 1105232BB); and RQ-7 UAV, (previously PE 1105233BB).

This program element is part of the Military Intelligence Program (MIP). Unmanned ISR rapidly develops and deploys special capabilities to perform ISR for deployed Special Operations Forces (SOF) using non-traditional means. USSOCOM has been designated as the Department of Defense lead for planning, synchronizing, and as directed, executing global operations against terrorist networks and targets. United States Special Operations Command (USSOCOM) requires the capability to find, fix, and finish time-sensitive high-value fixed and fleeting targets at the unit and team level without placing personnel and units in harm's way. These targets can often only be identified with patient collection of information and require rapid, decisive action during the short periods in which they present themselves. This PE addresses the primary areas of ISR and Targeting capabilities for SOF. This R-1 program element includes \$5.000 million for both FY 2019 and FY 2020 enduring Overseas Contingency Operations (OCO) funding. FY 2021 funding includes OCO for Enduring Requirements (\$5.000 million). These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	44.970	42.377	39.154	-	39.154
Current President's Budget	44.970	42.377	19.154	5.000	24.154
Total Adjustments	0.000	0.000	-20.000	5.000	-15.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other	-	-	-20.000	5.000	-15.000

Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: S855: <i>Unmanned ISR</i>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>	

<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u> Congressional Add: <i>Anti-ice for Group 3 and above UAV's</i>	FY 2019	FY 2020
	6.000	-
Congressional Add Subtotals for Project: S855	6.000	-
Congressional Add Totals for all Projects	6.000	-

Change Summary Explanation

Funding:

FY 2019: None.

FY 2020: None.

FY 2021: Net decrease of \$15.000 million is due to funding transfer from base (-\$5.000 million) to OCO (\$5.000 million) for Enduring Requirements.

For the Defense Wide Review (DWR), USSOCOM performed a comprehensive analysis of future capabilities and is reducing the SAFC projects to better align with the Department's priorities as outlined in the National Defense Strategy (-\$15.000 million).

-\$15.000 million - SAFC - reduces development, integration, evaluation, and miniaturization capability into SOF Small Unmanned Aerial Systems (SUAS).

Schedule: None.

Technical: None.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>				Project (Number/Name) S855 / <i>Unmanned ISR</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S855: <i>Unmanned ISR</i>	53.657	44.970	42.377	19.154	5.000	24.154	22.252	24.152	26.058	25.859	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project is part of the Military Intelligence Program (MIP). It rapidly develops and deploys special capabilities to perform Intelligence, Surveillance, and Reconnaissance (ISR) for deployed Special Operations Forces (SOF) using non-traditional means.

Group 1, 2, 3 and 4, Unmanned Aerial Systems (UAS) developmental efforts are to identify, develop, integrate, and test SOF-unique mission kits, mission payloads, air vehicle enhancements, and modifications to ground control stations. Based on stakeholder input and requirements, Special Applications for Contingencies (SAFC) develops and integrates UAS payloads to advance ISR capabilities that address dynamic and emergent operational needs of the SOF user. Efforts include improving imagery intelligence and electronic warfare payloads, capitalizing on developing technologies to reduce size, weight and power while addressing processing and data management challenges. This program also provides a mechanism for SOF user combat evaluation of emerging sensor technologies.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: SAFC	20.679	22.276	10.070	-	10.070
<p>Description: SAFC's evolutionary development projects quickly provide integrated, SOF-unique mission kits, mission payloads, air vehicle enhancements and ground control station upgrades to its user community. These efforts rapidly develop and integrate Unmanned Aerial Systems (UAS) air vehicles, payloads and other technologies to field ISR capabilities and address dynamic and emergent operational needs and vulnerabilities of the SOF user. Efforts include improving imagery intelligence and electronic warfare payloads, capitalizing on developing technologies to reduce size, weight and power while addressing processing and data management challenges. It also provides a mechanism for SOF user combat evaluation of emerging sensor technologies. SAFC applies focused Research & Development (R&D) for relatively low cost solutions to provide short lead-time contingency planning requirements where focused R&D will allow for test and evaluation of leading edge solutions to emergent problem sets.</p> <p>FY 2020 Plans: Continue development and combat evaluation of selected sensor delivery platforms and mounted or deliverable ISR capabilities for global contingencies including short-notice requirements. Continue evaluation of unique sensor technologies, persistent stare and quick reaction systems.</p> <p>FY 2021 Base Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160434BB / Unmanned ISR	Project (Number/Name) S855 / Unmanned ISR		
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continues development and combat evaluation at a reduced level from prior years of selected sensor delivery platforms and mounted or deliverable ISR capabilities for global contingencies including short-notice requirements. Continues evaluation of unique sensor technologies, persistent stare and quick reaction systems. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$12.206 million was made available due to reduced development and evaluation of selected sensor delivery platforms and mounted or deliverable ISR capabilities for global contingencies.					
Title: Group 1 UAS Description: Group 1 UAS are small tactical systems, less than 20 pounds in weight. Provides for rapid development and prototyping efforts to identify, develop, integrate, and test SOF-unique mission kits.	0.329	-	-	-	-
Title: Expeditionary Organic Tactical Airborne ISR Capability Set (EOTACS) Description: EOTACS systems are less than 55 pounds in weight and include fixed wing, Vertical Takeoff and Landing, and tethered platforms. Provides for rapid development and prototyping efforts to identify, develop, integrate, and test SOF-unique mission kits. Leverage SAFC development efforts. FY 2020 Plans: Group 1 UAS funding is incorporated into the EOTACS program starting in FY20. Continue integration and testing of SOF-unique mission kits, mission payloads, and modifications to the small tactical UAS and ground control station, to include but not limited to: improved capabilities for geo-location, collection of push-to-talk, communications, specialized tagging, tracking, and locating, and enhanced communications relay and work to miniaturize previously developed payloads. FY 2021 Base Plans: Group 1 UAS funding is incorporated into the EOTACS program starting in FY20. Continues integration and testing of SOF-unique mission kits, mission payloads, and modifications to the small tactical UAS and ground control station, to include but not limited to: improved capabilities for geo-location, collection of push-to-talk, communications, specialized tagging, tracking, and locating, and enhanced communications relay and work to miniaturize previously developed payloads. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.004 million is due to minor adjustments.	-	0.279	0.283	-	0.283
Title: Group 2 Multi-Mission Tactical Unmanned Aerial Service (MTUAS)	6.262	7.854	4.719	-	4.719

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020			
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160434BB / Unmanned ISR		Project (Number/Name) S855 / Unmanned ISR		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Description: Group 2 MTUAS are medium tactical systems, between 21 pounds and 55 pounds in weight. Identifies, develops, integrates, and tests SOF-unique mission kits, payloads, aircraft and ground control station modifications.</p> <p>FY 2020 Plans: Continue integration and testing of SOF-unique mission capabilities to meet new medium tactical UAS requirements, to include but not limited to: signals intelligence gathering, full motion video, geo-location, communications relay, Global Position Satellite (GPS) anti-jam technology, wartime mission, and decreased footprint. Additionally, acquires test articles for planned upgrades.</p> <p>FY 2021 Base Plans: Continues integration and testing of SOF-unique mission capabilities to meet new medium tactical UAS requirements, to include but not limited to: signals intelligence gathering, full motion video, geo-location, communications relay, GPS anti-jam technology, wartime mission, and decreased footprint. Additionally, acquires test articles for planned upgrades. Awards contract for future materiel solution to meet updated requirements.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$3.135 million to continue iterative upgrades after a spike in FY20 for test articles.</p>						
<p>Title: Group 3 UAS</p> <p>Description: Group 3 UAS are systems, between 55 pounds and 1320 pounds in weight. Identifies, develops, integrates, and tests SOF-unique mission kits, payloads and ground control station modifications.</p> <p>FY 2020 Plans: Continue integration and testing of SOF-unique mission capabilities to meet Group 3 UAS requirements, to include but not limited to: signals intelligence gathering, full motion video, communications relay, GPS Anti-jam, Mode 5 Identification Friend or Foe (IFF) and mobile control station.</p> <p>FY 2021 Base Plans: None.</p> <p>FY 2021 OCO Plans:</p>		5.000	5.000	0.000	5.000	5.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command				Date: February 2020	
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>		Project (Number/Name) S855 / <i>Unmanned ISR</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continues integration and testing of SOF-unique mission capabilities to meet Group 3 UAS requirements, to include but not limited to: signals intelligence gathering, full motion video, communications relay, GPS Anti-jam, Mode 5 IFF and mobile control station. FY 2020 to FY 2021 Increase/Decrease Statement: None.					
Title: Group 4 UAS Description: Group 4 UAS are large systems that weigh greater than 1,320 pounds and fly higher than flight level 180. Provides for development efforts to identify, develop, integrate, and test SOF-unique mission kits. FY 2020 Plans: Develop, test, and integrate SOF peculiar emerging technology mission kits, mission payloads, weapons, and modification on MQ-1C UAVs, Ground Control Stations (GCS), and training systems. FY 2021 Base Plans: Develops, tests, and integrates SOF peculiar emerging technology mission kits, mission payloads, weapons, and modification on MQ-1C UAVs, Ground Control Stations (GCS), and training systems. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$2.886 million is a natural three-year pattern for developmental efforts which will show cyclical increases and decreases across the system lifecycle.	6.700	6.968	4.082	-	4.082
Accomplishments/Planned Programs Subtotals	38.970	42.377	19.154	5.000	24.154

	FY 2019	FY 2020
Congressional Add: Anti-ice for Group 3 and above UAV's	6.000	-
FY 2019 Accomplishments: Continue development of anti-ice solutions for Group 3 and above UAV's.		
Congressional Adds Subtotals	6.000	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0201UMNISR: <i>Unmanned ISR</i>	101.308	19.955	25.488	8.207	33.695	27.469	26.795	30.360	28.991	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command							Date: February 2020
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 1160434BB / Unmanned ISR		Project (Number/Name) S855 / Unmanned ISR	

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Remarks											

D. Acquisition Strategy

SAFC acquisition strategy is evolutionary and spiral-based for technology insertion and low volume procurement. SAFC utilizes existing competed contract vehicles to the maximum extent possible for minor development and integration and modification of Government-Off-The-Shelf (GOTS)/Commercial-Off-The-Shelf (COTS) equipment. Utilizes limited/full and open competition contracts and rapid acquisition tools for major developments.

The Group 1 UAS/EOTACS are evolutionary acquisition programs that deliver, integrate, and qualify SOF-unique mission kits, mission payloads, weapons, air vehicle enhancements, and ground control station upgrades. These capabilities are obtained through a thorough stakeholder's analysis in order to provide well and broadly defined capabilities. A well-defined stakeholder requirement facilitates rapid development and integration of capabilities, thus more rapidly providing capability to the field. Contracting methods depend on the type of development effort. Competitive source selection will be conducted as much as possible. Proprietary considerations may direct some effort to the Original Equipment Manufacturer (OEM).

Group 2 MTUAS are evolutionary acquisition solutions that deliver, integrate, and qualify SOF-unique modular mission kits that may include: mission payloads, weapons, air vehicle enhancements, training systems, and ground control station upgrades. These capabilities are obtained through available acquisition strategy that includes a thorough stakeholder's analysis to provide well and broadly defined capabilities. A well-defined stakeholder requirement facilitates rapid development and integration of capabilities, thus more rapidly providing capability to the field. Contracting methods depend on the type of development effort. Competitive source selection will be conducted as much as possible but may also leverage Other Transactional Authorities (OTAs) when sensible. Proprietary considerations may direct some effort to the OEM on a sole source basis.

Group 3 UAS are evolutionary acquisition projects that deliver, integrate, and qualify SOF-unique mission kits, mission payloads, weapons, air vehicle enhancements, and ground control station upgrades. These capabilities are obtained through a thorough stakeholder's analysis in order to provide well and broadly defined capabilities. A well-defined stakeholder requirement facilitates rapid development and integration of capabilities, thus more rapidly providing capability to the field. Contracting methods depend on the type of development effort. Competitive source selection will be conducted as much as possible. Proprietary considerations may direct some efforts to the OEM.

Group 4 UAS is an evolutionary acquisition program that develops, tests, and integrates SOF peculiar emerging technology mission kits, mission payloads, weapons, and modifications on MQ-1C UAVs, GCS, and training systems. Group 4 UAS provides rapid prototype activities and technology maturation events to increase situational awareness and lethality. Contract types include a mix of cost type and fixed price. Proprietary issues with the aircraft and GCS software as well as aircraft modification may require sole source contracting to the original equipment manufacturer. Group 4 UAS leverages service common Contractor Logistics Support (CLS) and developmental activities and contracts for aircraft and ancillary equipment development, improvement, and sustainment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160434BB / Unmanned ISR				Project (Number/Name) S855 / Unmanned ISR					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Special Applications for Contingencies (SAFC) Platform/Payload Development and Integration	MIPR	Various; Various : Various	5.839	1.876	Dec 2018	0.706	Jan 2020	6.570	Dec 2020	-		6.570	Continuing	Continuing	-
SAFC - NAVSEA / JHU / APL	C/Various	JHU/ APL : Various	-	3.558	Jan 2019	4.757	Nov 2019	-		-		-	0.000	8.315	-
SAFC - NIWC: Beyond Line of Sight (BLOS) Laser Mod Payload Auto Target Recognition Development and Integration	C/Various	Various : Various	-	1.020	Jan 2020	2.109	Feb 2020	-		-		-	0.000	3.129	-
NAWC - AD	C/Various	Various : Various	-	-		4.353	Nov 2020	-		-		-	0.000	4.353	-
NexTech Solutions (NTS) Inc.	C/Various	Various : Various	-	-		4.931	Jun 2020	-		-		-	0.000	4.931	-
SAFC - GSA - ISIQ-Cambridge Inc. Platform/Payload Development and Integration	C/Various	Various : Various	-	9.264	Oct 2019	-		-		-		-	0.000	9.264	-
SAFC Heat Coat UAS Anti-Icing (Congressional Add)	MIPR	Alion Science and Technology : VA	3.586	5.640	Feb 2020	-		-		-		-	0.000	9.226	-
Group 1 Unmanned Aerial System (UAS)/ Expeditionary Organic Tactical Airborne ISR Capability Set (EOTACS) Payload Integration	C/IDIQ	Alion Science and Technology : VA	0.479	0.329	Mar 2019	0.279	Mar 2020	0.283	Mar 2021	-		0.283	Continuing	Continuing	-
Group 2 UAS Platform/Payloads Development and Integration	MIPR	Various : Various	5.753	5.099	Jan 2019	6.020	Mar 2020	1.655	Mar 2021	-		1.655	Continuing	Continuing	-
Group 3 UAS Platform/Payload Development and Integration (OCO)	MIPR	Various : Various	-	4.467	Mar 2019	4.400	Mar 2020	0.000		4.300	Mar 2021	4.300	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>	Project (Number/Name) S855 / <i>Unmanned ISR</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Group 4 UAS Platform/ Payloads Development and Integration	MIPR	Various : Various	5.600	6.432	Mar 2019	6.681	Mar 2020	3.297	Mar 2021	-		3.297	Continuing	Continuing	-
Prior Year Effort	Various	Various : Various	9.504	-		-		-		-		-	0.000	9.504	-
Subtotal			30.761	37.685		34.236		11.805		4.300		16.105	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SAFC Platform/Payload Integration	MIPR	Various : Various	1.282	0.250	Jan 2019	0.230	Jan 2020	0.500	Jan 2021	-		0.500	Continuing	Continuing	-
Group 2 UAS Platform/ Payload Support	MIPR	Various : Various	0.818	0.100	Feb 2019	0.050	Jan 2020	0.050	Jan 2021	-		0.050	Continuing	Continuing	-
Subtotal			2.100	0.350		0.280		0.550		-		0.550	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SAFC Sensor Testing, Evaluation and Demonstration	MIPR	Various; Various : Various	12.288	0.430	Nov 2018	0.200	Nov 2019	2.000	Dec 2020	-		2.000	Continuing	Continuing	-
SAFC - NAVSEA - JHU / APL	C/Various	Various : Various	-	1.000	Jan 2019	1.200	Feb 2020	-		-		-	0.000	2.200	-
SAFC - NIWC: Beyond Line of Sight (BLOS) Laser Mod Payload Auto Target Recognition Development and Integration	C/Various	Various : Various	-	0.400	Jan 2020	0.400	Feb 2020	-		-		-	0.000	0.800	-
NAWC - AD	C/Various	Various : Various	-	-		1.200	Feb 2020	-		-		-	0.000	1.200	-
NextTech Solutions (NTS) Inc.	C/Various	Various : Various	-	-		1.000	Jun 2020	-		-		-	0.000	1.000	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>	Project (Number/Name) S855 / <i>Unmanned ISR</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SAFC - GSA - ISIQ-Cambridge Inc.	C/Various	Various : Various	-	2.000	Oct 2019	-		-		-		-	0.000	2.000	-
Group 2 UAS Platform/Payload Test and Evaluation	MIPR	Various : Various	0.951	0.496	Feb 2019	1.004	Mar 2020	1.004	Mar 2021	-		1.004	Continuing	Continuing	-
Group 3 UAS Test and Evaluation (OCO)	MIPR	Various Vendors During Integrations : Various	-	0.533	Jun 2019	0.600	Jan 2020	0.000		0.700	Jan 2021	0.700	Continuing	Continuing	-
Group 4 UAS Test and Evaluation	Various	Various : Various Vendors During Integration	0.120	0.268	Mar 2019	0.287	Mar 2020	0.785	Mar 2021	-		0.785	Continuing	Continuing	-
Prior Year	Various	Various : Various	3.393	-		-		-		-		-	0.000	3.393	-
Subtotal			16.752	5.127		5.891		3.789		0.700		4.489	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SAFC Sensor Testing, Evaluation and Demonstration Management	MIPR	Various : Various	2.474	0.881	Mar 2019	1.190	Mar 2020	1.000	Dec 2020	-		1.000	Continuing	Continuing	-
SAFC Heat Coat UAS Anti-Icing Contract Administration (Congressional Add)	MIPR	Cambridge International : Cambridge, MD	0.247	-		-		-		-		-	0.000	0.247	-
SAFC Heat Coat UAS Anti-Icing Contract Administration (Congressional Add)	MIPR	Alion Science and Technology : Va	0.247	0.360	Feb 2020	-		-		-		-	0.000	0.607	-
Group 2 UAS Platform/Payload Management	MIPR	Various : Various	1.076	0.567	Feb 2019	0.780	Mar 2020	2.010	Mar 2021	-		2.010	Continuing	Continuing	-
Subtotal			4.044	1.808		1.970		3.010		-		3.010	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160434BB / Unmanned ISR					Project (Number/Name) S855 / Unmanned ISR				
	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	53.657	44.970		42.377		19.154		5.000		24.154	Continuing	Continuing	N/A	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

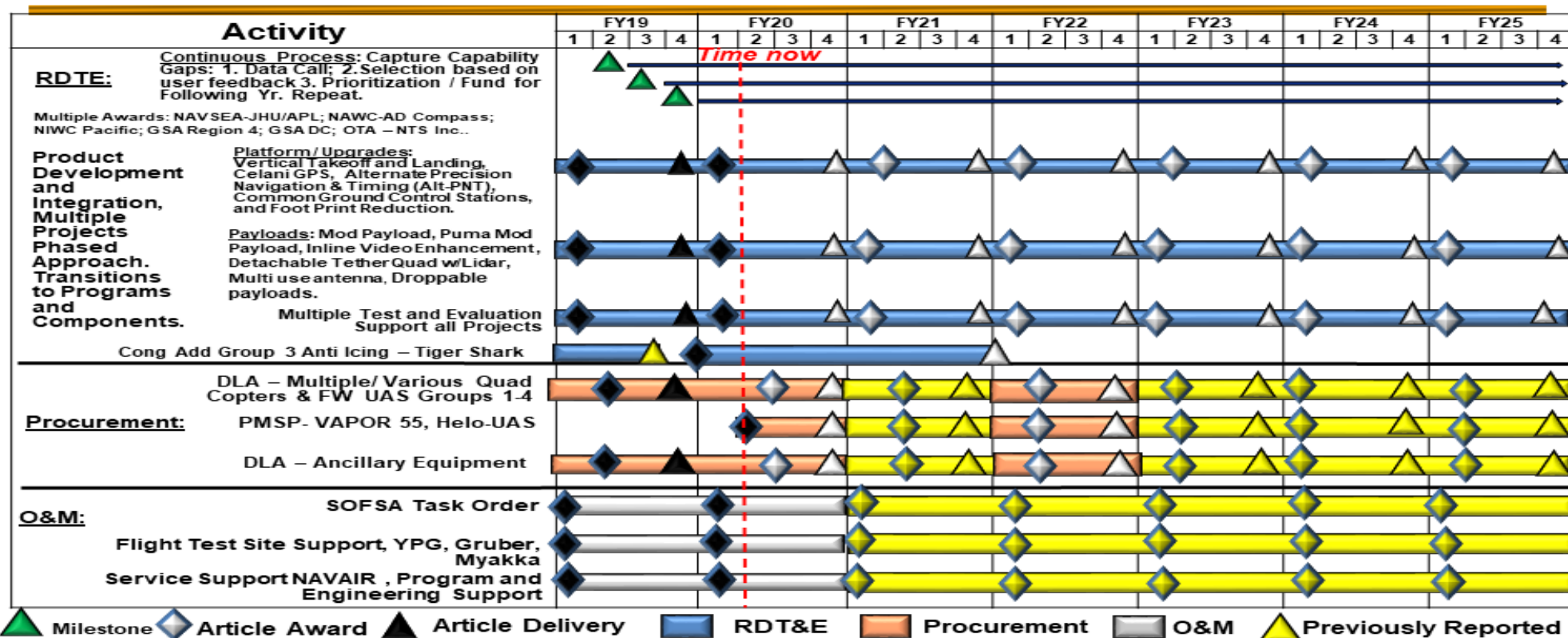
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160434BB / Unmanned ISR

Project (Number/Name)
S855 / Unmanned ISR

Special Application For Contingencies (SAFC) PEO Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

Appropriation/Budget Activity
0400 / 7

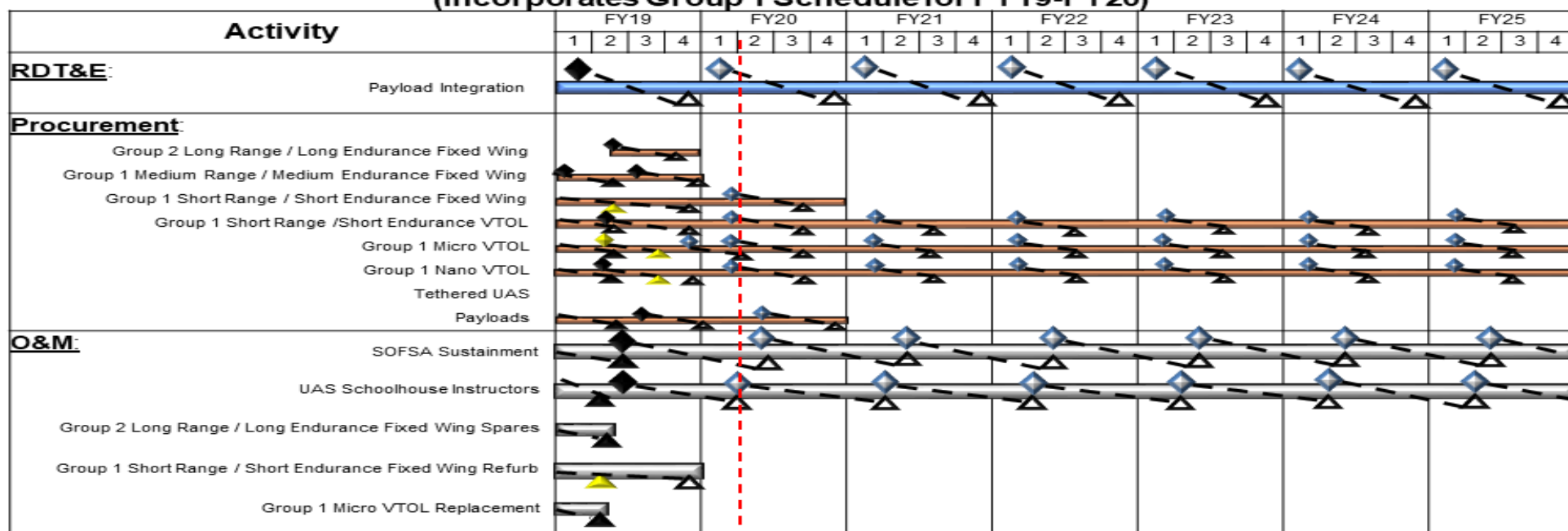
R-1 Program Element (Number/Name)
PE 1160434BB / Unmanned ISR

Project (Number/Name)
S855 / Unmanned ISR

Expeditionary Organic Tactical Airborne ISR Capability Set (EOTACS)

PEO-Managed Schedule

(Incorporates Group 1 Schedule for FY19-FY20)



 Article Award
  Article Delivery
  RDT&E
  Procurement
  O&M
  Previously Reported

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

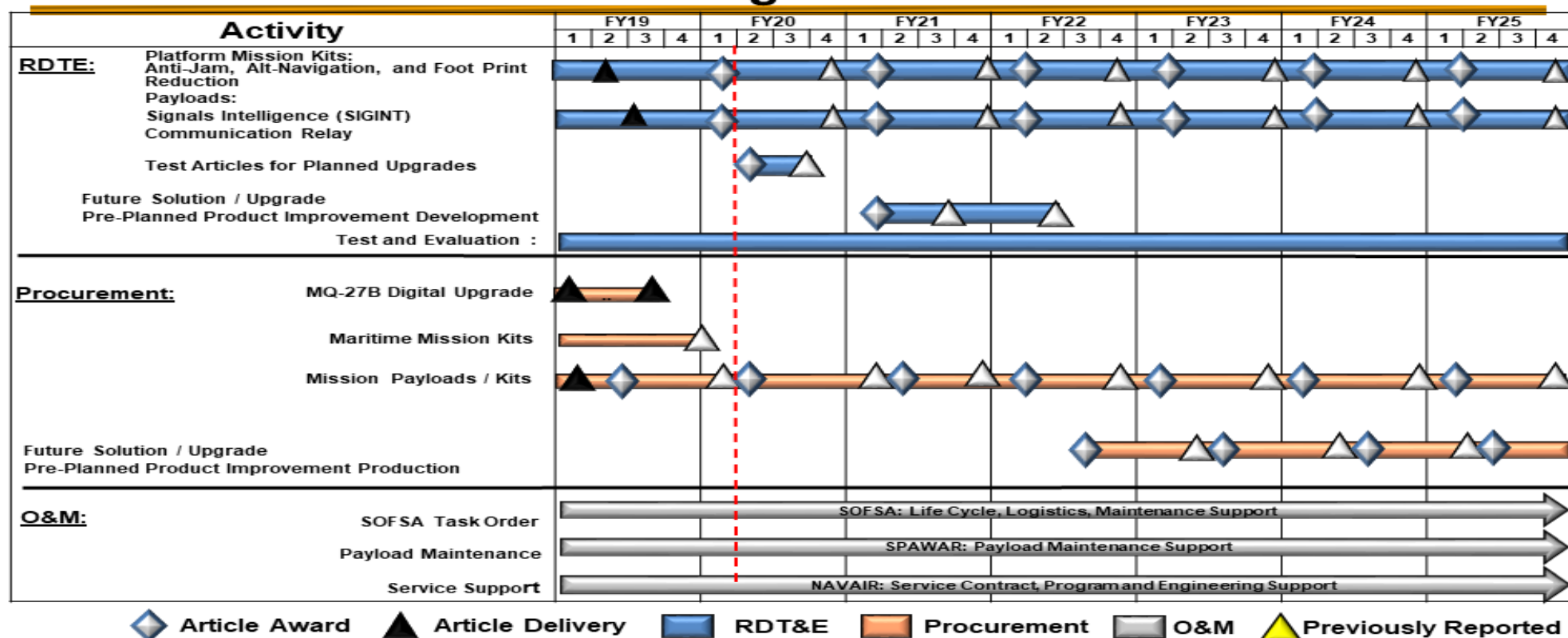
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160434BB / Unmanned ISR

Project (Number/Name)
S855 / Unmanned ISR

Group 2 Multi-Mission Tactical Unmanned Aerial Service (MTUAS) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

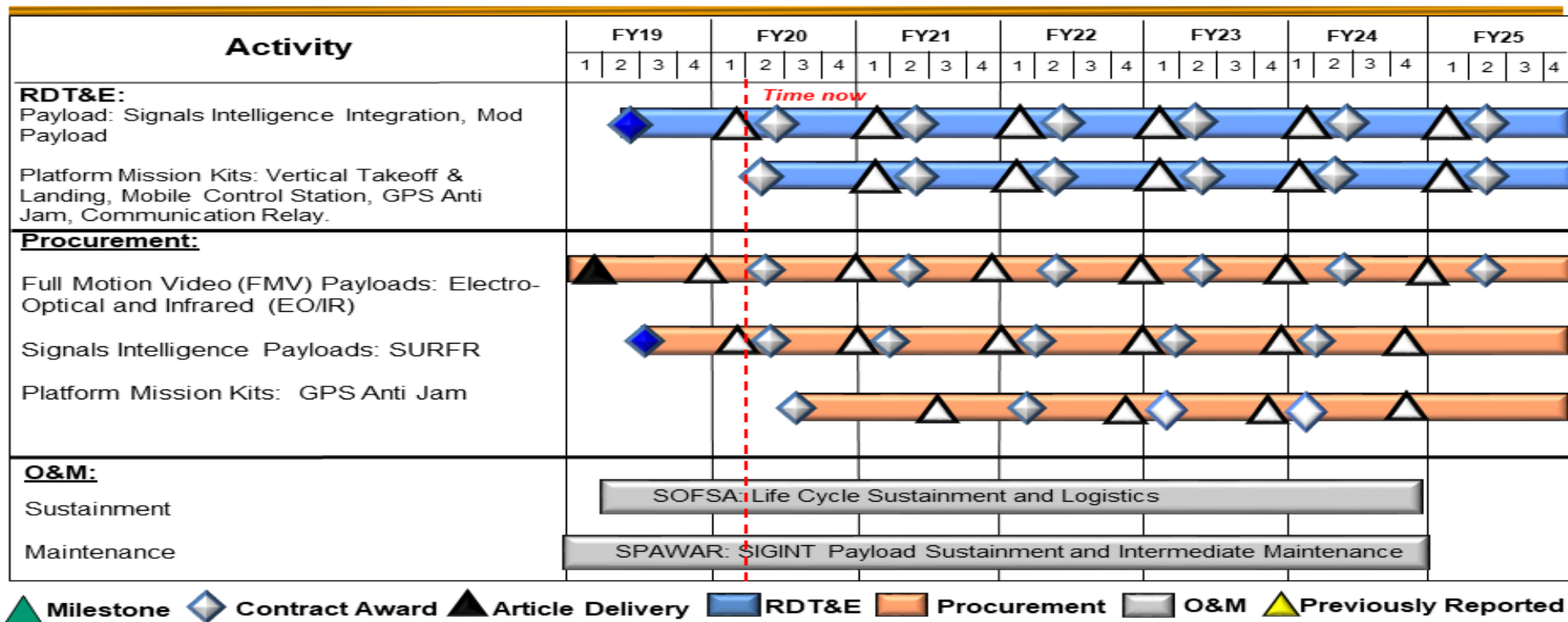
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160434BB / Unmanned ISR

Project (Number/Name)
S855 / Unmanned ISR

Group 3 Unmanned Aerial Service PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

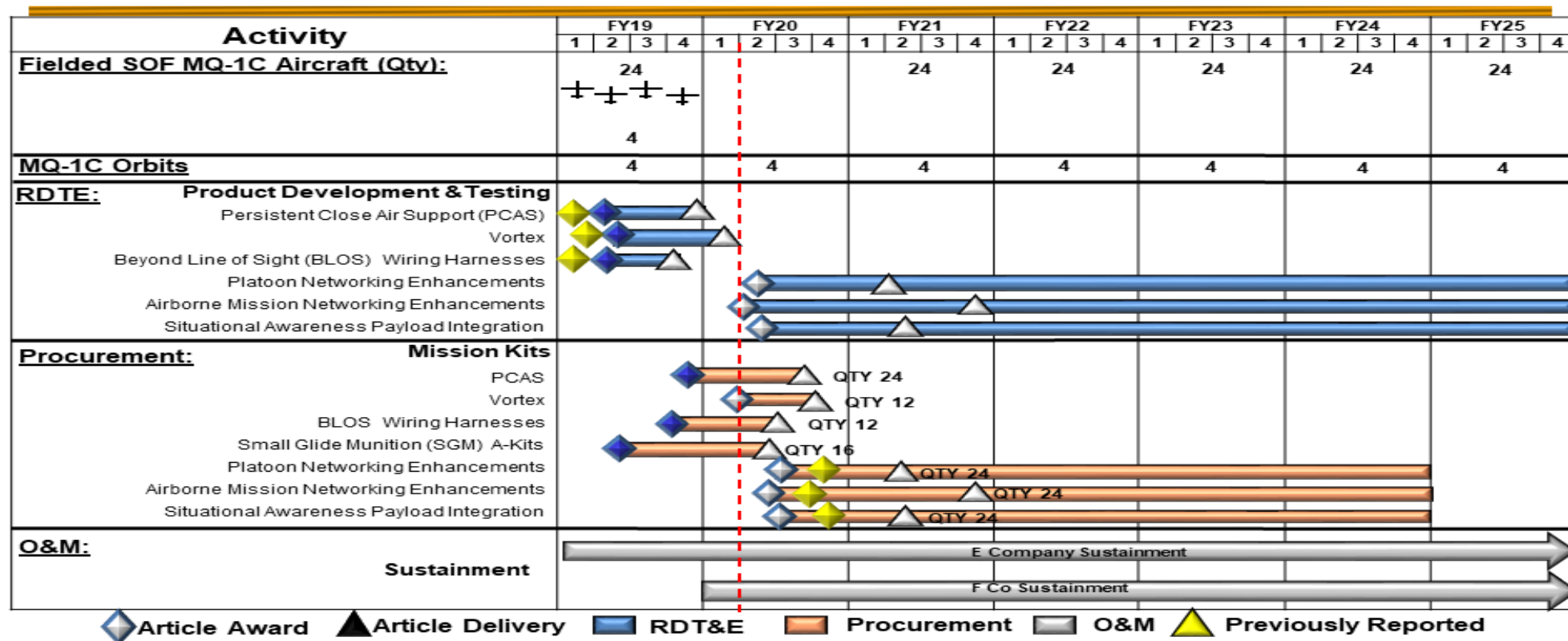
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160434BB / Unmanned ISR

Project (Number/Name)
S855 / Unmanned ISR

Group IV Unmanned ISR PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160434BB / <i>Unmanned ISR</i>	Project (Number/Name) S855 / <i>Unmanned ISR</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Special Application for Contingencies (SAFC)</i>				
Product Development, Support, and Management	1	2019	4	2025
Test and Evaluation	1	2019	4	2025
Anti-Icing Development on TigerShark	1	2019	4	2021
<i>Group 1 Unmanned Aerial System (UAS)/Expeditionary Organic Tactical Airborne ISR Capability Set (EOTACS)</i>				
Payload Integration; Test Range Support	1	2019	4	2025
<i>Group 2 UAS</i>				
Platform/Payload Development and Integration	1	2019	4	2025
Platform/Payload Test & Evaluation	1	2019	4	2025
<i>Group 3 UAS</i>				
Platform/Payload Development and Integration	2	2019	4	2025
<i>Group 4 UAS</i>				
Persistent Close Air Support (PCAS) Integration	2	2019	4	2019
Vortex Integration	2	2019	1	2020
Beyond Line of Sight (BLOS) wiring harness integration	2	2019	4	2019
Platoon Networking Enhancements	2	2020	4	2025
Airborne Mission Networking Enhancements	2	2020	4	2025
Situational Awareness Sensor Integration	2	2020	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 1160480BB / <i>SOF Tactical Vehicles</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	40.218	1.806	11.150	9.263	-	9.263	4.191	5.221	4.820	4.916	Continuing	Continuing
S910: <i>SOF Tactical Vehicles</i>	40.218	1.806	11.150	9.263	-	9.263	4.191	5.221	4.820	4.916	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for the development and testing of a variety of capability upgrades to Special Operations Forces (SOF) Vehicles and ancillary equipment. Current SOF tactical vehicles are categorized into Light, Medium, Heavy, and Commercial, and include the following: Light Tactical All-Terrain Vehicles (LTATV), Ground Mobility Vehicles (GMV 1.1), Mine Resistant Ambush Protected (MRAP) vehicles, Non Standard Commercial Vehicles (NSCV), and Joint Light Tactical Vehicle (JLTV). The SOF mission mandates that SOF vehicles remain technologically superior, operate in multiple environments, and be able to meet any threat to provide a maximum degree of survivability. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	1.846	11.150	9.263	-	9.263
Current President's Budget	1.806	11.150	9.263	-	9.263
Total Adjustments	-0.040	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.040	-			

Change Summary Explanation

Funding:

FY 2019: Decrease of \$0.040 million is due to the transfer of funds to Small Business Innovative Research/Small Business Technology Research Transfer programs (SBIR/STTR).

FY 2020: None.

FY 2021: None.

Schedule: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160480BB / <i>SOF Tactical Vehicles</i>	
<p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160480BB / SOF Tactical Vehicles				Project (Number/Name) S910 / SOF Tactical Vehicles			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S910: SOF Tactical Vehicles	40.218	1.806	11.150	9.263	-	9.263	4.191	5.221	4.820	4.916	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Family of Special Operations Vehicles (FSOV) project develops, tests, and evaluates SOF Tactical Vehicles and associated modifications. FSOV engages in annual technology insertion efforts, to include rapid prototyping/fielding efforts targeted at ground vehicle capability enhancements across the mobility, survivability, payload, and durability spectrum. The Special Operations Forces (SOF) mission mandates that SOF vehicles remain technologically superior, operate in multiple environments and be able to meet any threat to provide a maximum degree of survivability. The current family of SOF tactical vehicles include: light mobility vehicles, medium mobility vehicles, non-standard commercial vehicles, and heavy mobility vehicles.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: FSOV	1.806	11.150	9.263	-	9.263
Description: Funding provides for design/engineering, test, and evaluation costs related to capability upgrades in the following areas: Survivability, Lethality, Signature Management, Mobility/Performance, Communications, and Product Development. These capability upgrades and Engineering Change Proposals (ECPs) are incorporated across the FSOV portfolio of vehicles Non-Standard Commercial Vehicle (NSCV), Ground Mobility Vehicle (GMV 1.1), Light Tactical All-Terrain Vehicle (LTATV), Mine Resistant Ambush Protected (MRAP) vehicle, and the Joint Light Tactical Vehicle (JLTV).					
FY 2020 Plans: Continue design/development and integration of ECPs that implement capability upgrades and improve the performance of the NSCV, GMV1.1, LTATV, and MRAP vehicles. Design and produce prototypes of a hybrid/ electric version of the GMV1.1 allowing a reduced audible signature on future missions with an additional goal of reducing the logistical footprint (less moving parts, no fuel, and oils required, etc.). Develop prototypes for a Purpose Built NSCV which will reduce future lifecycle costs and improve offroad mobility and durability for SOF operators. Additional technology development and insertion efforts include NSCV lightweight vehicle/armor design/transition, MRAP Situational Awareness improvements, Electronic Warfare Vulnerability Assessments, and Autonomous LTATV capability studies, and initiate and complete JLTV SOF evaluation and Command, Control, Communications, Computers, and Intelligence/Electronic Counter Measures (C4I/ECMs) design and testing.					
FY 2021 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160480BB / <i>SOF Tactical Vehicles</i>	Project (Number/Name) S910 / <i>SOF Tactical Vehicles</i>	

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continues design/development and integration of ECPs that implement capability upgrades and improve the performance of the NSCV, GMV 1.1, LTATV, MRAP, and JLTV vehicles. Initiates test and evaluation for hybrid/electric GMV 1.1 and Purpose Built NSCV. In addition, FSOV will initiate integration and test of designated Counter-Unmanned Aerial System (C-UAS)/Precision Strike Systems (PSS) on vehicle platforms to ensure performance of both systems with minimal adverse impacts. FY 2021 also includes technology development and insertion efforts for Autonomous LTATV, Acoustic Signature Reduction, Transferable Armor, and other SOF modification upgrades.					
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Decrease of -\$1.887 million is due to the transition of hybrid/electric GMV 1.1 and Purpose Built NSCV developmental prototypes into test and evaluation. Due to this, less funding is required in FY21 since no additional prototypes are planned for production during the test and evaluation phase.					
Accomplishments/Planned Programs Subtotals	1.806	11.150	9.263	-	9.263

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PROC/0204TACVEH: <i>Tactical Vehicles</i>	142.239	114.122	30.158	2.990	33.148	21.473	21.856	22.298	22.745	Continuing	Continuing

Remarks

D. Acquisition Strategy

Apply SOF-Peculiar modifications to service common or Commercial Off The Shelf (COTS) vehicles whenever possible. Otherwise, incorporate purpose-built, Non-Developmental Item, or modified COTS vehicles if/when service solution is unavailable.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160480BB / SOF Tactical Vehicles	Project (Number/Name) S910 / SOF Tactical Vehicles
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FSOV GMV 1.1 Capability Enhancements / ECP Development	Various	Various : Various	13.118	0.768	Dec 2018	2.775	May 2020	1.350	Nov 2020	-		1.350	Continuing	Continuing	-
FSOV NSCV Capability Enhancements / ECP Development	Various	Various : Various	1.156	-		4.035	Apr 2020	1.650	Nov 2020	-		1.650	Continuing	Continuing	-
FSOV LTATV Capability Enhancements / ECP Development	Various	Various : Various	0.920	0.065	Nov 2019	0.050	Dec 2019	0.700	Jul 2021	-		0.700	Continuing	Continuing	-
MRAP Capability Enhancements/ECP Development	Various	Various : Various	-	-		0.825	Apr 2020	1.100	Nov 2020	-		1.100	Continuing	Continuing	-
FSOV JLTV Capability Enhancements / ECP Development	Various	Various : Various	-	-		0.989	Feb 2020	1.000	Nov 2020	-		1.000	Continuing	Continuing	-
FSOV GMV 1.1 and NSCV Survivability Enhancement/Improvement Efforts	Various	Various : Various	0.971	0.163	Jan 2019	1.100	Apr 2020	0.450	Feb 2021	-		0.450	Continuing	Continuing	-
FSOV GMV 1.1 Capability Enhancements / ECP Development Overseas Contingency Operations (OCO)	Various	Various : Various	-	0.725	Feb 2019	-		-		-		-	0.000	0.725	-
Prior Year Funding	Various	Various : Various	0.385	-		-		-		-		-	0.000	0.385	-
Subtotal			16.550	1.721		9.774		6.250		-		6.250	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Funding	Various	Various : Various	5.522	-		-		-		-		-	0.000	5.522	-
Subtotal			5.522	-		-		-		-		-	0.000	5.522	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160480BB / <i>SOF Tactical Vehicles</i>	Project (Number/Name) S910 / <i>SOF Tactical Vehicles</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GMV 1.1 Test and Evaluation Validation Efforts (Automotive, C4I, Ballistics, Operator Events)	Various	Various : Various	0.339	-		-		1.363	Jan 2021	-		1.363	Continuing	Continuing	-
NSCV Test and Evaluation Validation Efforts (Automotive, C4I, Ballistics, Operator Events)	Various	Various : Various	2.118	0.085	Nov 2018	0.726	Aug 2020	1.650	Nov 2020	-		1.650	Continuing	Continuing	-
LTATV Test and Evaluation Efforts	Various	Various : Various	-	-		0.400	Jun 2020	-		-		-	0.000	0.400	-
JLTV Test and Evaluation Efforts	Various	Various : Various	-	-		0.250	Nov 2019	-		-		-	0.000	0.250	-
Prior Year Funding	Various	Various : Various	15.689	-		-		-		-		-	0.000	15.689	-
Subtotal			18.146	0.085		1.376		3.013		-		3.013	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			40.218	1.806		11.150		9.263		-		9.263	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

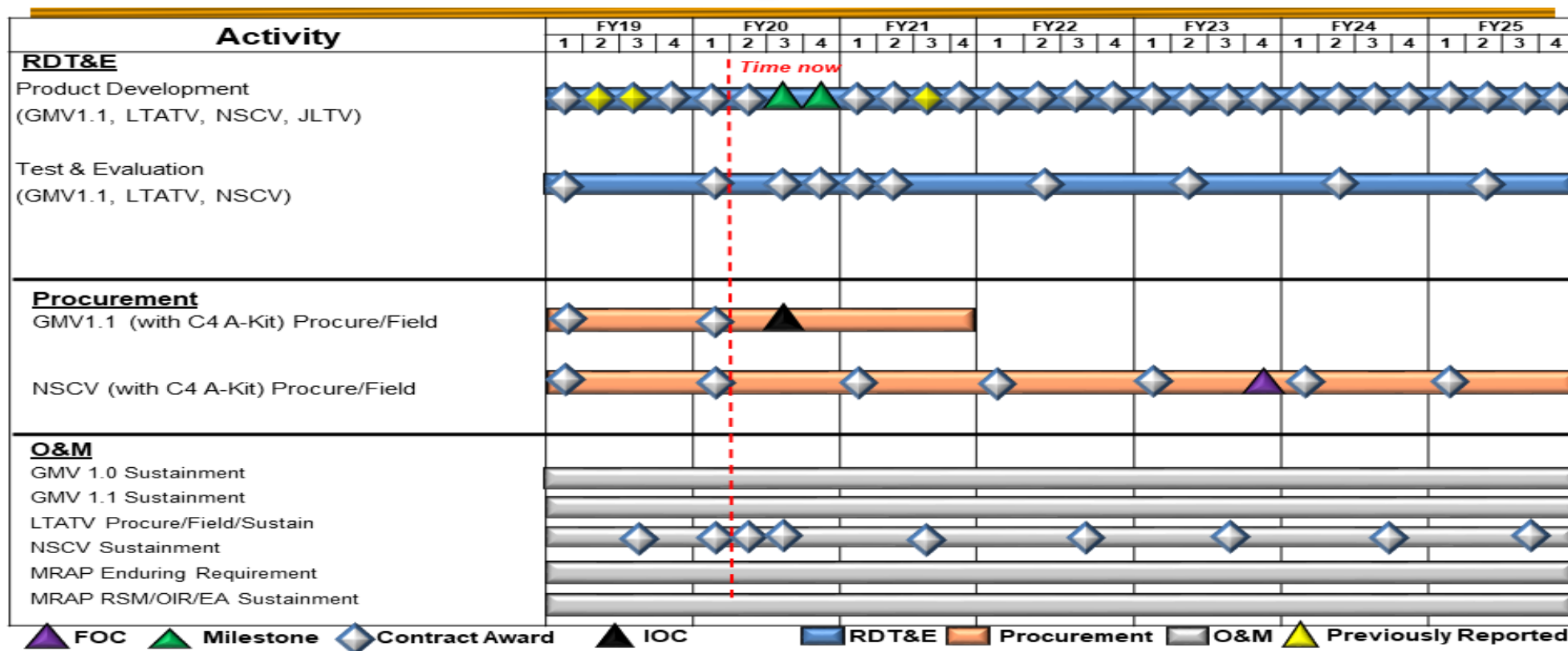
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160480BB / SOF Tactical Vehicles

Project (Number/Name)
S910 / SOF Tactical Vehicles

Family of Special Operations Vehicles (FSOV) PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160480BB / <i>SOF Tactical Vehicles</i>	Project (Number/Name) S910 / <i>SOF Tactical Vehicles</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Family of Special Operations Vehicles (FSOV)</i>				
Product Development (GMV 1.1, LTATV, NSCV, JLTV)	1	2019	4	2025
Test & Evaluation (GMV 1.1, LTATV, NSCV)	1	2019	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160483BB <i>I Maritime Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	468.664	40.600	72.626	59.882	-	59.882	51.099	46.417	71.523	74.667	Continuing	Continuing
S0417: <i>Underwater Systems</i>	427.546	26.064	45.205	43.154	-	43.154	38.054	36.186	61.474	64.739	Continuing	Continuing
S1684: <i>Surface Craft</i>	41.118	14.536	27.421	16.728	-	16.728	13.045	10.231	10.049	9.928	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for engineering and manufacturing development (EMD) of Special Operations Forces (SOF) Surface and Undersea Mobility platforms. This program element also provides for pre-acquisition activities to quickly respond to new requirements for SOF surface and undersea mobility, looking at multiple alternatives to include cross-platform technical solutions, service-common solutions, Commercial-Off-The-Shelf technologies, and new development efforts.

The Underwater Systems project provides for EMD of combat submersibles, SOF combat diving systems, underwater support systems, and underwater equipment. This project also provides for pre-acquisition activities (material solutions analysis, advanced component, prototype development, and exploitation of emerging technology opportunities to deliver enhanced capabilities) to respond to emergent requirements. These submersibles, equipment, and diving systems are used by SOF in the conduct of infiltration/extraction, personnel/material recovery, hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other missions. The capabilities of the submersible systems, diving systems, and unique equipment provide small, highly trained forces the ability to successfully engage the enemy and conduct clandestine operations associated with SOF maritime missions.

The Surface Craft project provides for EMD of medium and heavy surface combatant craft, combatant craft mission equipment, and pre-planned product improvement and technology insertion engineering changes to meet the unique requirements of SOF. This project element also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to quickly respond to new requirements for maritime craft and subsystems. The craft capabilities and unique equipment provide small, highly trained forces the ability to successfully engage the enemy and conduct operations associated with SOF maritime missions. These technologies will be pursued via rapid prototyping efforts when appropriate.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	42.471	72.626	61.921	-	61.921
Current President's Budget	40.600	72.626	59.882	-	59.882
Total Adjustments	-1.871	0.000	-2.039	-	-2.039
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.351	-			
• SBIR/STTR Transfer	-1.520	-			
• Other	-	-	-2.039	-	-2.039

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: S0417: *Underwater Systems*

Congressional Add: *SOF Combat Diving*

	FY 2019	FY 2020
	-	3.000
Congressional Add Subtotals for Project: S0417	-	3.000
Congressional Add Totals for all Projects	-	3.000

Change Summary Explanation

Funding:

FY 2019: Net decrease of \$1.871 million is due to a transfer to Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (-\$1.520 million) and funds made available to support critical emerging Command requirements in the year of execution (-\$0.351 million).

FY 2020: Net zero is due to a Congressional Directed Reduction which was a decrease within the Dry Combat Submersible (-\$3.000 million) and a Congressional Add increase for SOF Combat Diving (\$3.000 million).

FY 2021: Net decrease of \$2.039 million is due to an increase to align Tech Insertion Roadmap (TIR) for combatant craft systems for enhanced Global Positioning System (GPS), survivability and hybrid power study; SOF Peculiar Unmanned Underwater Vehicle (UUV) payloads; and integration of Maritime Precision Engagement (MPE) prototype on Combatant Craft Medium (CCM) test article (\$3.004 million), and Dry Combat Submersible (DCS) funding was made available to support critical emerging Command requirements (-\$0.450 million).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 1160483BB / Maritime Systems	
<p>For the Defense Wide Review (DWR), USSOCOM performed a comprehensive analysis of future capabilities which reduces the product development and integration of the Combatant Craft Heavy (CCH) program to better align with the Department’s priorities as outlined in the National Defense Strategy (-\$4.593 million).</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160483BB / Maritime Systems				Project (Number/Name) S0417 / Underwater Systems			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S0417: Underwater Systems	427.546	26.064	45.205	43.154	-	43.154	38.054	36.186	61.474	64.739	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for engineering and manufacturing development of combat underwater submersibles, Special Operations Forces (SOF) combat diving systems, underwater support systems, and underwater equipment. This project also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to respond to emergent requirements. These submersibles, equipment, and diving systems are used by SOF in the conduct of infiltration/extraction, personnel/material recovery, hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other missions. The capabilities of the submersible systems, diving systems, and unique equipment provides small, highly trained forces the ability to successfully engage the enemy and conduct clandestine operations associated with SOF maritime missions. These technologies will be pursued via rapid prototyping efforts when appropriate.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Shallow Water Combat Submersible (SWCS)	1.397	1.395	1.411
Description: SWCS provides for the design, development, and test of one Engineering Development Model (EDM) and 10 production units to replace the legacy MK 8 MOD 1 Seal Delivery Vehicle (SDV) system. SWCS is a free-flooding combat submersible mobility platform suitable for transporting and deploying SOF and their payloads for a variety of SOF missions. SWCS will be deployable from a Dry Deck Shelter (DDS), surface ships, and land. The SWCS system includes the SWCS vehicle and SWCS support equipment, comprised of Mission Support Equipment (MSE), Pack-Up Kit (PUK), and Transportation and Handling (T&H). It also includes integration efforts with the current Dry Deck Shelter (DDS) and development of product improvements accomplished throughout the lifecycle of the system.			
FY 2020 Plans: Continue Operational Testing and Preplanned Product Improvements (P3I). P3I enhancements include, but are not limited to, Propulsor, Acoustic and Radio Frequency indicators and warning capabilities, Electro-Optical (EO)/Infrared (IR) sensor development, and self recovery.			
FY 2021 Plans: Continues P3I. P3I enhancements include, but are not limited to, Propulsor, Power and Energy, Acoustic and Radio Frequency indicators and warning capabilities, EO/IR sensor, payload improvements, and self recovery.			
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.016 million is due to continued support of ongoing and planned P3I enhancements.			
Title: Dry Combat Submersible (DCS)	14.462	16.209	17.292

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>		Project (Number/Name) S0417 / <i>Underwater Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
<p>Description: DCS provides for the advanced development, engineering, manufacturing, and testing efforts for a surface-launched, dry, diver lock-in/lock-out vessel capable of inserting and extracting SOF and/or payloads into denied areas of one Engineering and Manufacturing Development (EMD) and two production units. USSOCOM tested one submersible prototype to validate test methodologies, commercial classification, and SOCOM safety certification processes and will continue to use the prototype to evaluate capability enhancing technologies and reduce risk in the DCS program. This program includes funding for enhanced warfighter capabilities such as Mid-Water Column Lock-In/Lock-Out, depressurization pump, and submarine interoperability.</p> <p>FY 2020 Plans: Continue the incorporation of P3I to increase the operational capability of DCS. Complete developmental and begin operational testing on DCS 1. Complete government acceptance testing on DCS 2. Begin DCS Block II EMD efforts.</p> <p>FY 2021 Plans: Continues the incorporation of P3I to increase the operational capability of DCS. Begins government acceptance testing on DCS 3. Continues DCS Block II EMD efforts.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$1.083 million is due to DCS shifting to Block II.</p>					
<p>Title: Dry Deck Shelter (DDS) Modernization</p> <p>Description: DDS provides for the pre-planned product improvements, testing, and integration of specialized underwater systems to meet the unique requirements of SOF, and compatibility with the submarine fleet. The current DDS is a certified diving system which attaches to modified host submarines that provides for insertion of SOF forces and platforms. Funding supports product improvements to the current DDS, as well as associated diver equipment for in-service submarine support systems, unmanned underwater vehicles, and follow on development efforts for future SOF payloads.</p> <p>FY 2020 Plans: Continue Field Changes necessary to extend useful life of the DDS, transitions from Ship, Submersible, Guided Missile, Nuclear (SSGN) to Virginia (VA) Class host platform, and increases capacity to carry larger payloads.</p> <p>FY 2021 Plans: Continues Field Changes necessary to extend useful life of the DDS and increases capacity to carry larger payloads. Completes the transition study of the SSGN to VA Class host platform</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>			8.221	5.278	1.206

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>		Project (Number/Name) S0417 / <i>Underwater Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
Decrease of \$4.072 million is due to the completion of the transition study from the SSGN and VA Class host platform and aligning FY21 Unmanned Underwater Vehicle (UUV) technology integration efforts to the UUV program.					
Title: SOF Combat Diving			1.984	2.160	2.205
Description: SOF Combat Diving provides the EMD, testing, and rapid prototyping of SOF peculiar diving equipment providing the SOF combat diver the ability to engage the enemy and conduct operations. SOF Combat Diving will support the SDV, SWCS, DCS, and surface craft with the conduct of infiltration/extraction, material recovery, underwater ship attack, beach clearance, and other missions. Technologies include, but are not limited to, commercial and developmental life support, maneuverability and propulsion, diver navigational accuracy and situational awareness, environmental protection, and communications between dive teams as well as between divers and external vessels/craft. SOF Combat Diving is designated a MTA program, which uses the rapid prototyping pathway and is executed using existing contracts, government agencies, and new contracts competitively selected as appropriate.					
FY 2020 Plans: Continue development, to include test and evaluation for environmental protection, navigation, communication, and propulsion.					
FY 2021 Plans: Continues development, to include test and evaluation for environmental protection, navigation, communication, propulsion, and begin shallow water underwater breathing apparatus.					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.045 million supports spiral development of SOF-Peculiar diving system-of-systems approach and integrates the man-carried diving equipment with the Undersea Platforms.					
Title: Undersea Craft Mission Equipment (UCME)			-	17.163	19.692
Description: UCME provides a rapid response capability to support SOF underwater craft and diver systems, subsystems, and their emerging requirements. UCME provides technology refresh efforts to correct system deficiencies, improve asset life, and enhance mission capability to leverage and exploit emerging technologies within the maritime Special Operations Forces undersea capability portfolio. UCME focuses on spearheading specific Technology Readiness Level (TRL) 6 technology for compatibility, maturity, marinization, and successful transition to SOF undersea craft programs.					
FY 2020 Plans: Begin development of undersea survivability enhancements; underwater and maritime domain communications; enhanced situational awareness and Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 1160483BB / Maritime Systems	Project (Number/Name) S0417 / Underwater Systems		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2019	FY 2020	FY 2021
Reconnaissance (C5/ISR); unique power and energy capabilities; other capability enhancements and enabling technologies for assured access, which supports the National Defense Strategy (NDS). FY 2021 Plans: Continues development of undersea survivability enhancements; underwater and maritime domain communications; enhanced situational awareness and C5/ISR; unique power and energy capabilities; other capability enhancements and enabling technologies for assured access, which supports the NDS. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$2.529 million is due to increased investment in enhanced survivability, navigation, C5ISR/Situational Awareness (SA), power and energy, and other assured access technologies.					
Title: MK18 Mod 1 Unmanned Underwater Vehicle (UUV) Description: MK 18 Mod 1 UUV enables access to contested / denied areas in the maritime domain, provides Maritime Special Reconnaissance capabilities and reduces risk to personnel and manned platforms. This program develops and integrates SOF-peculiar modifications to the Service Common, MFP-2 funded, Mark 18 Mod 1 UUV. FY 2021 Plans: Begins payload development/integration for Beyond Line Of Sight (BLOS) capability via cognitive router effort, encrypted communications, underwater launch and recovery, and artificial intelligence. Begins and completes development/integration for Acoustic Intercept Receiver. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$1.000 million is due to heightened demand signal for Naval Special Warfare (NSW) undersea capabilities.			-	-	1.000
Title: Combatant Craft Light (CCL) Description: CCL is a small combatant craft that supports deployment of six combat equipped SOF operators and their payloads for selected missions in multiple threat environments. Its compact form factor provides SOF with versatile mission transportability, deployment, and utility capabilities. FY 2021 Plans: Completes integration and testing of Low Rate Initial Production (LRIP) craft. FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.348 million is due to integration and testing of LRIP craft.			-	-	0.348
Accomplishments/Planned Programs Subtotals			26.064	42.205	43.154

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S0417 / <i>Underwater Systems</i>	

	FY 2019	FY 2020
Congressional Add: SOF Combat Diving	-	3.000
FY 2020 Plans: Continue development of SOF Diver propulsion.		
Congressional Adds Subtotals	-	3.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0210US: <i>Underwater Systems</i>	128.816	58.991	20.556	-	20.556	18.974	7.219	15.562	15.873	Continuing	Continuing

Remarks

D. Acquisition Strategy

- SWCS used full and open competition with a down select to a single contractor. The full spectrum of contracting activities are being utilized for any integration and subsystem requirements, using existing contracts where appropriate, government agencies, and new contracts as necessary. Sole source Justification and Approval (J&A) was approved and awarded to deliver final production Articles to meet full operational capability (FOC).
- DCS used full and open competition, resulting in the selection of a single prime contractor and award of a Fixed Price Incentive Firm Target contract for three vessels. DCS-Block II begins market research in FY 2020.
- The DDS is currently in sustainment through a maintenance and service contract which was competitively sourced, and awarded for a five-year period. The modernization and engineering/change efforts for the six DDS in inventory are executed utilizing the existing services contract.
- SOF Combat Diving is designated an MTA program which supports rapid prototyping and is executed using existing contracts, government agencies, and new contracts competitively selected as appropriate.
- UCME will use streamlined Federal Acquisition Regulation (FAR) contracting with existing or planned Indefinite Delivery, Indefinite Quantity (IDIQ), Blanket Order Agreement (BOA), University Affiliated Research Center (UARC), and Federally Funded Research and Development Center (FFRDC) contracts and use Non-FAR Acquisition Authorities and Other Transaction Authority (OTA) agreements, where appropriate.
- UUV will procure an existing service common man-portable UUV and augment it with purpose built, modular, plug-and-play sensors and payloads to meet SOF requirements.
- CCL engineering and manufacturing development was sole source. Program Management Office (PMO) is evaluating limited competition for follow-on production contract contingent on cost tradeoffs and completeness of technical data.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command												Date: February 2020			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 1160483BB / Maritime Systems				Project (Number/Name) S0417 / Underwater Systems					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Shallow Water Combat Submersible (SWCS) Engineering Changes	C/Various	Various : Various	-	1.197	Jan 2019	1.191	Jan 2020	1.203	Jan 2021	-		1.203	Continuing	Continuing	-
Dry Combat Submersible (DCS) Block II EMD	C/Various	Various : Various	-	-		2.986	Feb 2020	5.500	Feb 2021	-		5.500	Continuing	Continuing	-
DCS Enhancements / Planning, Performance, Process and Innovative Solutions (P3I) Changes	C/Various	Various : Various	9.418	1.998	Nov 2018	4.589	Nov 2019	7.242	Nov 2020	-		7.242	Continuing	Continuing	-
DCS Engineering & Manufacturing Development (EMD)	C/FPIF	Lockheed Martin : Riviera Beach, FL	65.858	2.224	Dec 2018	-		-		-		-	0.000	68.082	-
DCS Depressurization Pump/Signature Management/Modeling and Simulation/Risk Mitigation (Congressional add)	C/Various	Various : Various	14.100	-		-		-		-		-	0.000	14.100	-
DCS Technologies Government Furnished Equipment	C/Various	Various : Various	40.753	0.100	Nov 2018	-		-		-		-	0.000	40.853	-
Dry Deck Shelter (DDS) Modernization	C/CPFF	Oceaneering International Inc. Marine Services Division : Chesapeake, VA	26.999	7.899	Jan 2019	4.950	Jan 2020	-		-		-	0.000	39.848	-
DDS Field Changes	C/Various	Oceaneering International Inc. Marine Services Division : Chesapeake, VA	-	-		-		0.872	Jan 2021	-		0.872	Continuing	Continuing	-
Special Operation Forces (SOF) Combat Diving-Unique Diving Technologies	Various	Various : Various	4.942	1.302	Apr 2019	1.464	Nov 2019	1.502	Feb 2021	-		1.502	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S0417 / <i>Underwater Systems</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Undersea Craft Mission Equipment (UCME) Survivability, Navigation, C5ISR/SA, Power & Energy enhancements and other assured access technologies	C/Various	Various : Various	-	-		16.360	Feb 2020	19.101	Dec 2020	-		19.101	Continuing	Continuing	-
MK18 Mod 1 Unmanned Underwater Vehicle (UUV)	C/Various	Various : Various	-	-		-		1.000	Mar 2021	-		1.000	Continuing	Continuing	-
Prior Year Funding	Various	Various : Various	202.681	-		-		-		-		-	0.000	202.681	-
Subtotal			364.751	14.720		31.540		36.420		-		36.420	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Funding	Various	Various : Various	9.094	-		-		-		-		-	0.000	9.094	-
Subtotal			9.094	-		-		-		-		-	0.000	9.094	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SWCS	Various	PSU ARL / JHU-APL : Laurel, MD / State College, PA	3.192	0.200	Nov 2018	0.204	Nov 2019	0.208	Nov 2020	-		0.208	Continuing	Continuing	-
DCS	C/Various	NAVSEA / CRANE : Crane, IN	11.831	7.769	Nov 2018	9.254	Nov 2019	4.550	Oct 2020	-		4.550	Continuing	Continuing	-
SOF Combat Diving	Various	Various : Various	1.130	0.491	Mar 2019	0.520	Oct 2019	0.520	Oct 2020	-		0.520	Continuing	Continuing	-
UCME	C/Various	Various : Various	-	-		0.275	Jun 2020	-		-		-	0.000	0.275	-
CCL	C/Various	Various : Various	-	-		-		0.348	Dec 2020	-		0.348	0.000	0.348	-
Prior Year Funding	Various	Various : Various	9.320	-		-		-		-		-	0.000	9.320	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S0417 / <i>Underwater Systems</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			25.473	8.460		10.253		5.626		-		5.626	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DCS	Various	Booz Allen Hamilton : Tampa, FL	17.048	2.371	Apr 2019	2.380	Apr 2020	-		-		-	0.000	21.799	-
DDS	Various	NAVSEA : Washington, DC	1.679	0.322	Jan 2019	0.328	Jan 2020	0.334	Jan 2021	-		0.334	Continuing	Continuing	-
UCME	C/Various	Various : Various	-	-		0.528	Apr 2020	0.591	Dec 2020	-		0.591	Continuing	Continuing	-
SOF Combat Diving	C/Various	Booz Allen Hamilton : Tampa, FL	0.170	0.191	Dec 2018	0.176	Dec 2019	0.183	Dec 2020	-		0.183	Continuing	Continuing	-
Prior Year Funding	Various	Various : Various	9.331	-		-		-		-		-	0.000	9.331	-
Subtotal			28.228	2.884		3.412		1.108		-		1.108	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	427.546	26.064		45.205		43.154		-		43.154	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

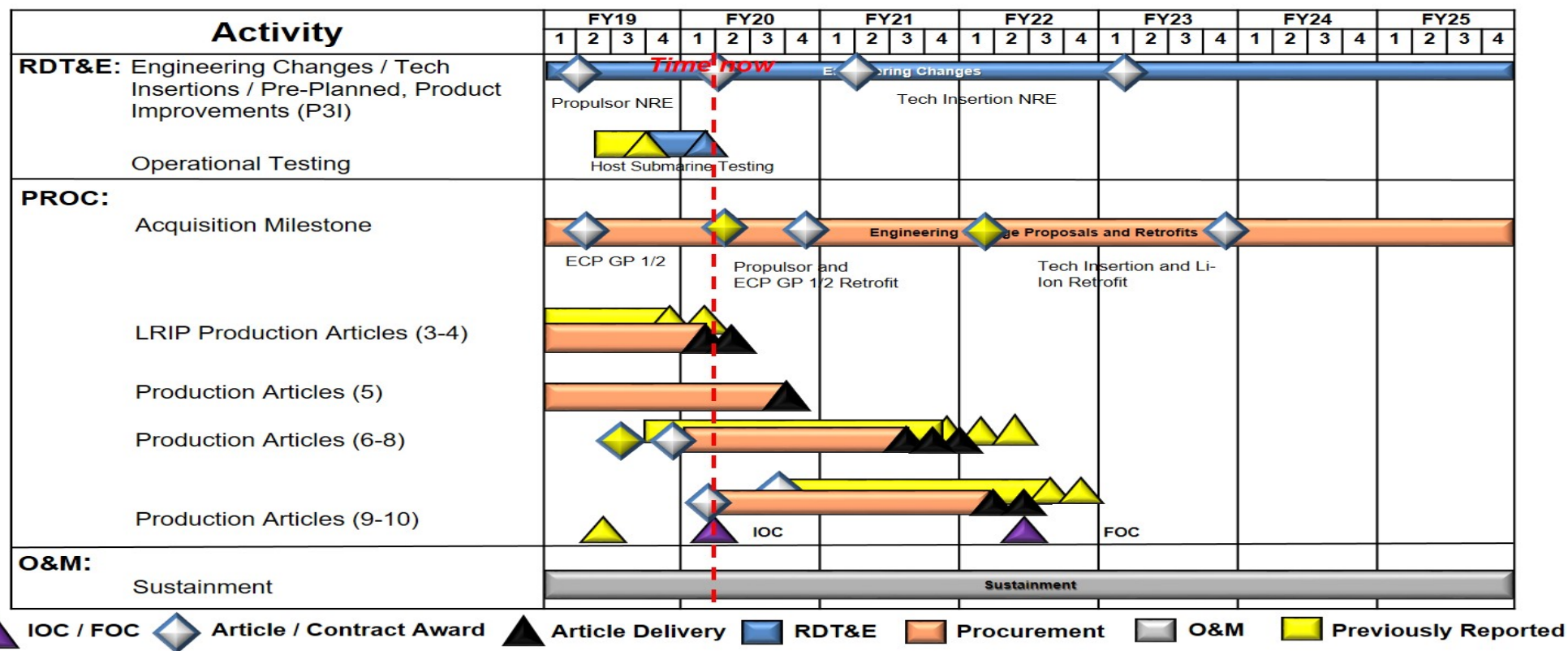
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Shallow Water Combat Submersible (SWCS) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

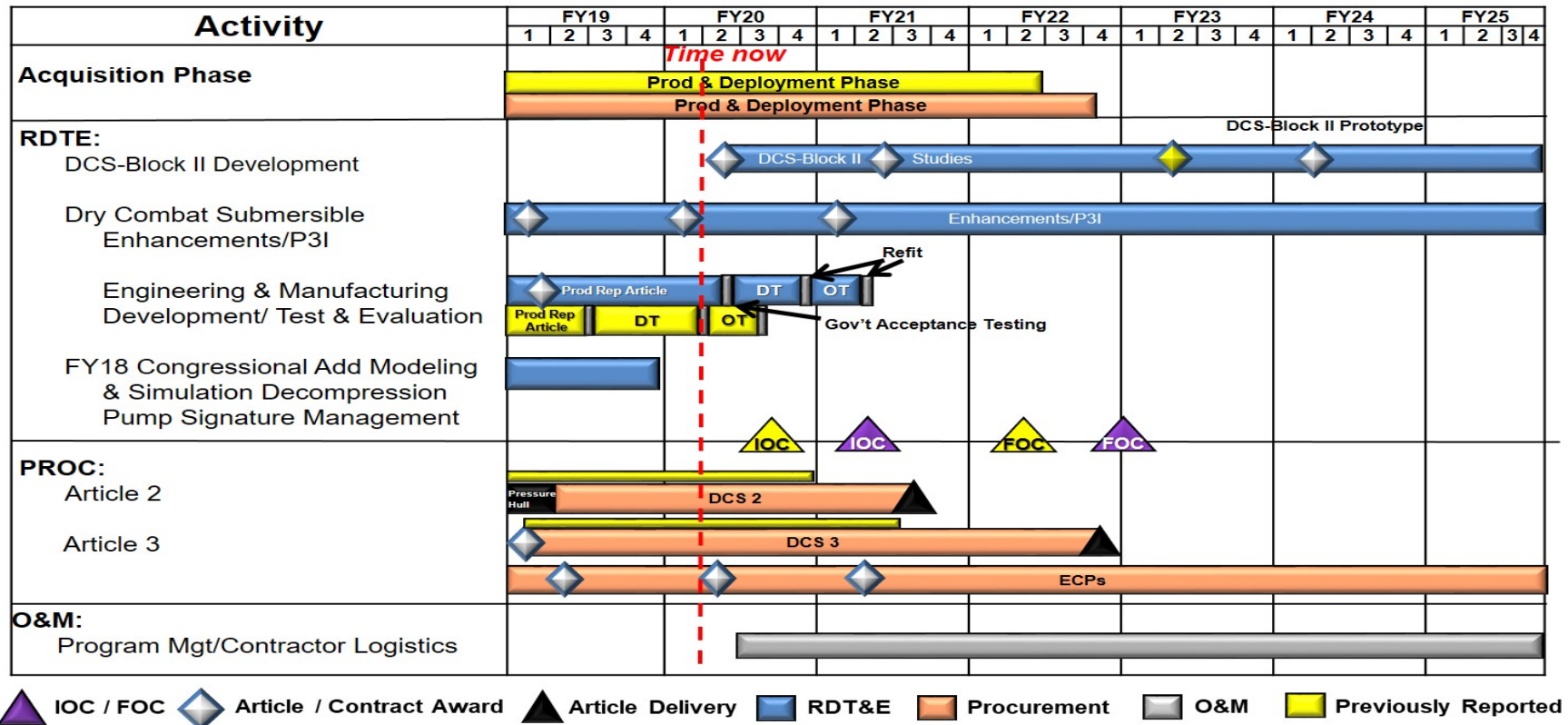
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Dry Combat Submersible (DCS) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

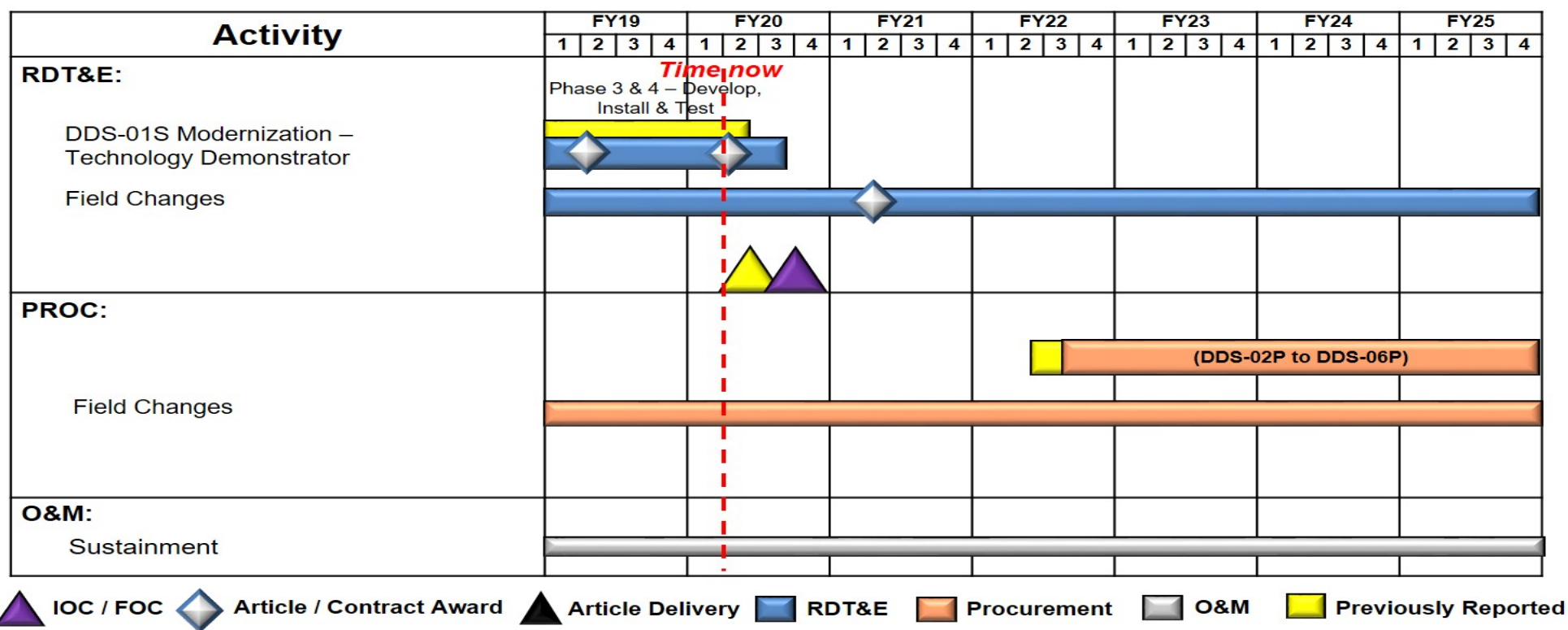
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Dry Deck Shelter (DDS) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

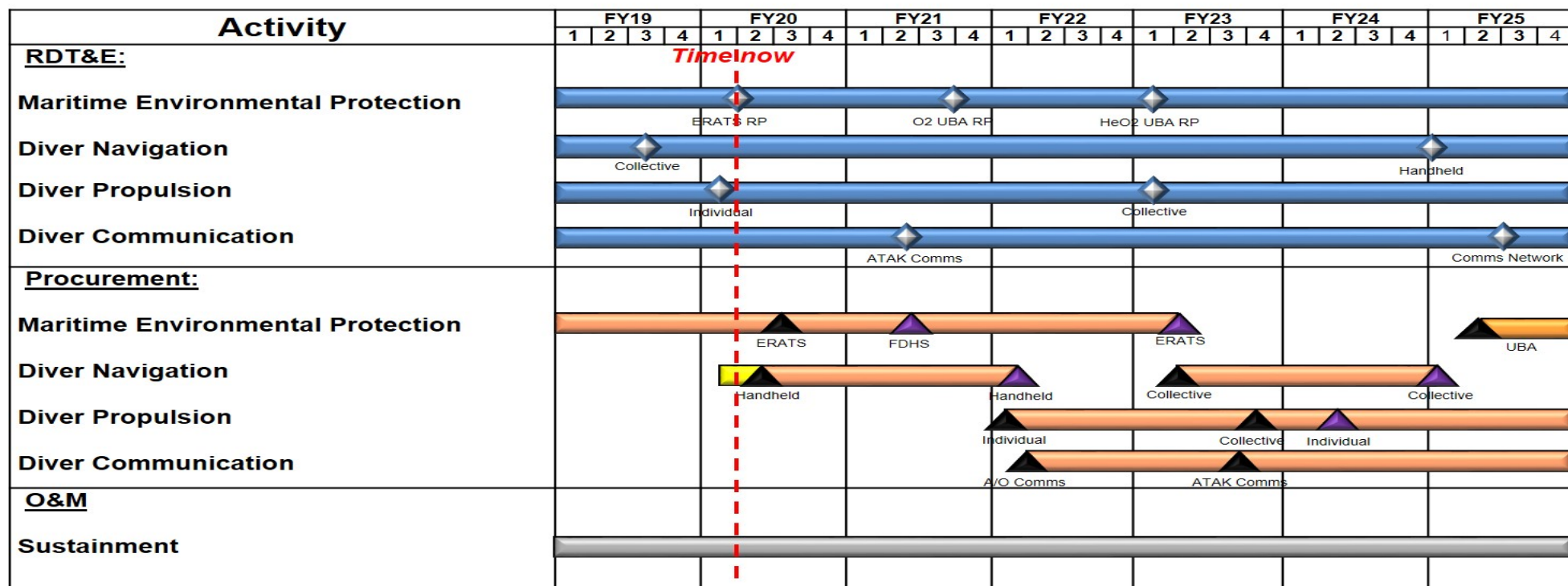
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Special Operations Forces (SOF) Combat Diving PEO-Managed Schedule



FOC
 Article / Contract Award
 Article Delivery
 RDT&E
 Procurement
 O&M
 Previously Reported

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

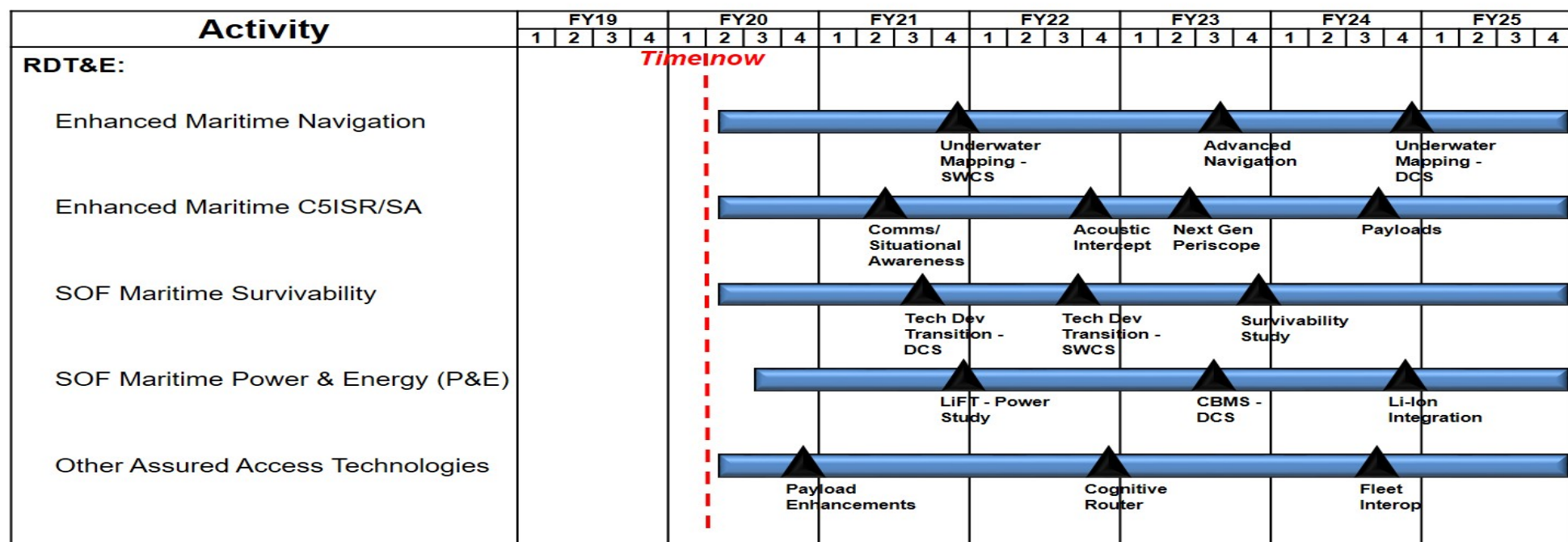
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Undersea Craft Mission Equipment (UCME) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

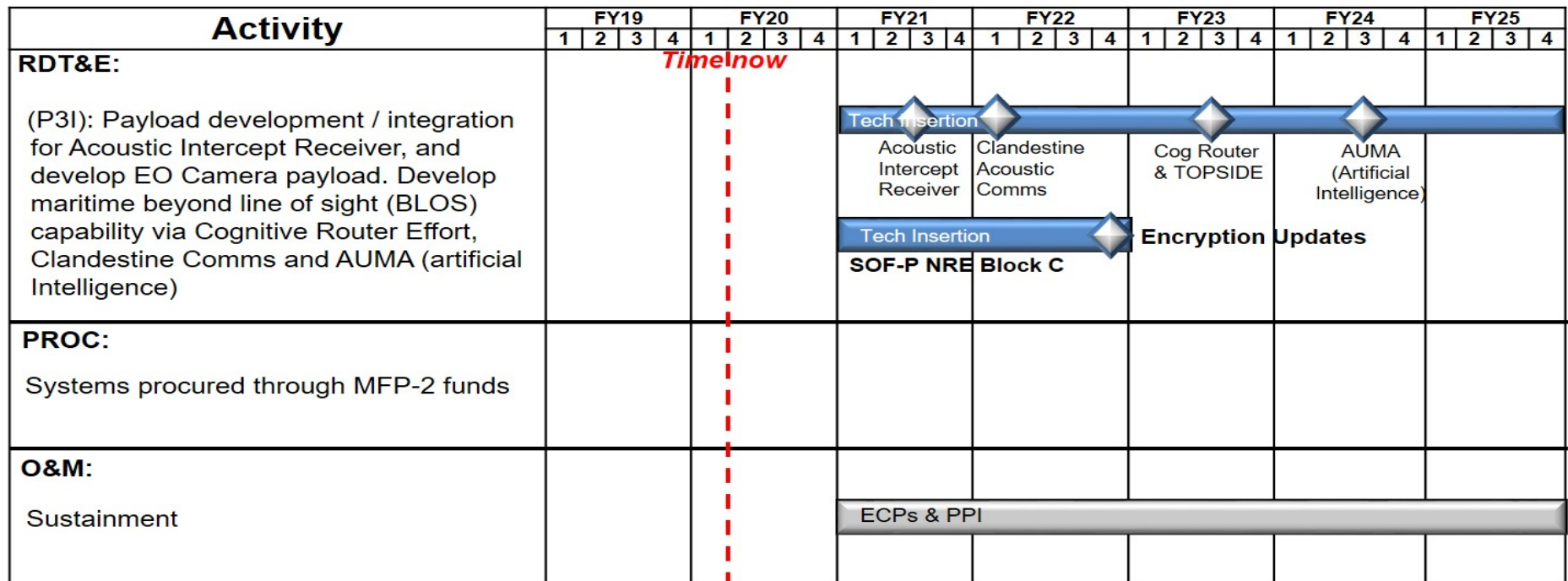
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S0417 / Underwater Systems

Mk 18 Mod 1 Unmanned Underwater Vehicle (UUV) PEO-Managed Schedule



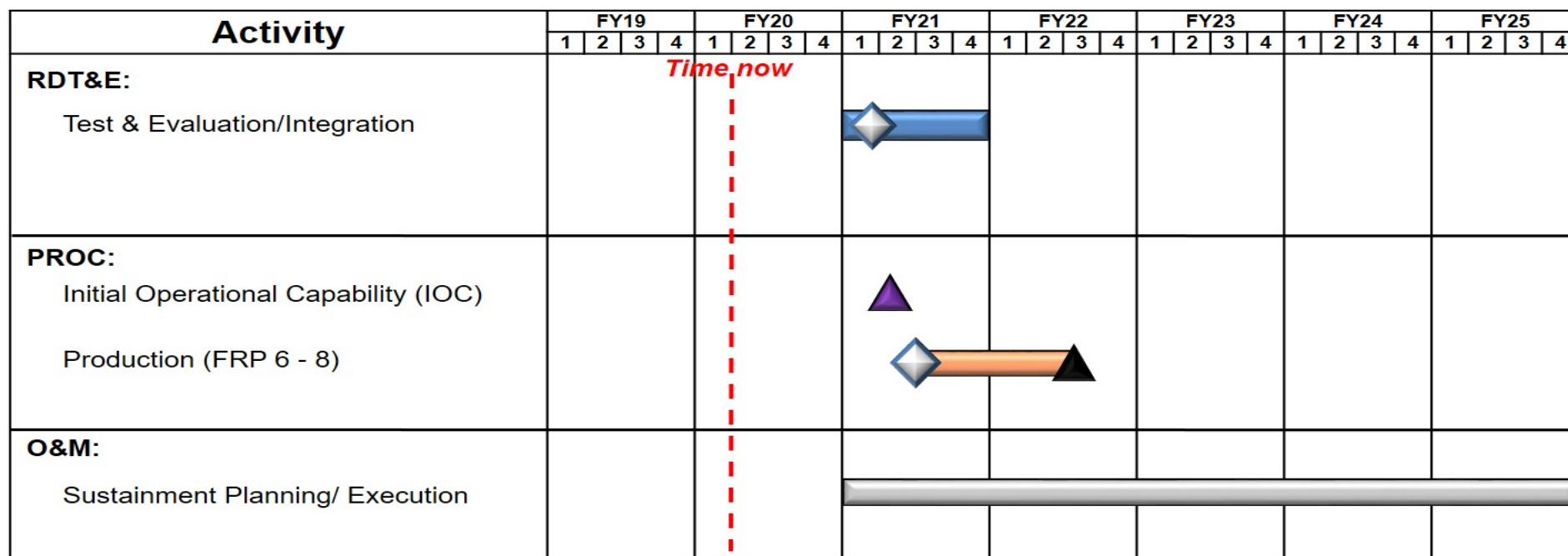
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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

Date: February 2020

Appropriation/Budget Activity
0400 / 7R-1 Program Element (Number/Name)
PE 1160483BB / Maritime SystemsProject (Number/Name)
S0417 / Underwater Systems

Combatant Craft Light (CCL) PEO-Managed Schedule



IOC / FOC
 Article / Contract Award
 Article Delivery
 RDT&E
 Procurement
 O&M
 Previously Reported

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S0417 / <i>Underwater Systems</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Shallow Water Combat Submersible (SWCS)</i>				
Enhancements/ Preplanned Product Improvements (P3I)	1	2019	4	2025
Operational Testing	4	2019	1	2020
<i>Dry Combat Submersibles (DCS)</i>				
DCS Block II	2	2020	4	2025
Enhancements/ P3I	1	2019	4	2025
Production Representative Article (Engineering and Manufacturing Development)	1	2019	2	2020
Developmental Test and Evaluation	2	2020	4	2020
Operational Test and Evaluation	4	2020	2	2021
<i>Dry Deck Shelter Modernization (DDS)</i>				
Phase 3 & 4 Development	1	2019	3	2020
Field Changes	1	2019	4	2025
<i>Special Operation Forces (SOF) Combat Diving</i>				
Maritime Environmental Protection Rapid Prototyping, Test, and Integration	1	2019	4	2025
Diver Navigation Rapid Prototyping, Test, and Integration	1	2019	4	2025
Diver Propulsion Rapid Prototyping, Test, and Integration	1	2019	4	2025
Diver Communication Rapid Prototyping, Test, and Integration	1	2019	4	2025
<i>Undersea Craft Mission Equipment (UCME)</i>				
Enhanced Maritime Navigation	2	2020	4	2025
Enhanced Maritime C5ISR/SA	2	2020	4	2025
SOF Maritime Survivability	2	2020	4	2025
SOF Maritime Power & Energy (P&E)	3	2020	4	2025
Other Assured Access Technologies	2	2020	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S0417 / <i>Underwater Systems</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>MK18 Mods 1 Unmanned Underwater Vehicle (UUV)</i>				
MK18 Mods 1 Unmanned Underwater Vehicle (UUV) P3I	1	2021	4	2025
Tech Insertion	1	2021	4	2022
<i>Combatant Craft Light (CCL)</i>				
Test and Evaluation / Integration	1	2021	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command										Date: February 2020		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>				Project (Number/Name) S1684 / <i>Surface Craft</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
S1684: <i>Surface Craft</i>	41.118	14.536	27.421	16.728	-	16.728	13.045	10.231	10.049	9.928	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for engineering and manufacturing development of small, medium, heavy, and assault surface combatant craft, combatant craft mission equipment, and Pre-Planned Product Improvement (P3I) and technology insertion engineering changes to meet the unique requirements of Special Operations Forces (SOF). This project also provides for pre-acquisition activities (materiel solutions analysis, advanced component development and prototypes) to quickly respond to new requirements for maritime craft and subsystems. The craft capabilities and unique equipment provide small, highly trained forces the ability to successfully conduct operations associated with SOF maritime missions.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Combatant Craft Medium (CCM) Description: CCM is a semi-enclosed multi-mission combatant craft for platoon-size maritime mobility in maritime contested environments. It is multi-mission capable, including Maritime Interdiction, Insert / Extract, and Visit, Board, Search, and Seizure (VBSS) Operations. CCM is Naval Special Warfare's (NSW) craft-of-choice for long-range, high-payload SOF mobility operations in contested environments. CCM has NSW's best Iron Triangle: 40 knot (kt) speed; 4 crew + 19 passengers (pax)/10,000 pound (lb) payload; and 600 nautical miles (nm) range. CCM payload capacity enables inclusion of shock mitigating seats, which is critical for ride quality, operator tactical readiness, and operator health. At 60 feet long, CCM is C-17 / C5 transportable and can launch/recover by well deck or shore based trailer. FY 2020 Plans: Begin survivability enhancements, MK 50 remote weapon system integration, and Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) upgrades, and complete integration of the Joint Threat Warning System (JTWS). Begin aft enclosure development and testing. FY 2021 Plans: Continues survivability enhancements, MK 50 integration, and C5ISR upgrades. Continues aft enclosure development and testing. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$0.674 million is due to completion of JTWS integration.	1.629	2.917	2.243
Title: Combatant Craft Heavy (CCH) Description: CCH represents a family of solutions that provides platoon-size maritime surface mobility. The current CCH is the Sea, Air, Land Insertion, Observation, and Neutralization (SEALION) craft. SEALION is a fully-enclosed, climate-controlled,	0.586	3.956	0.925

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
<p>semi-submersible craft that operates in contested environments. SEALION is NSW's most versatile and survivable combatant craft and the craft-of-choice for sensitive maritime intelligence, surveillance, and reconnaissance missions. Iron Triangle: 40 kt speed; 7 crew + 12 pax / 3,300 lb payload; and 400 nm range. SEALION payload capacity enables inclusion of shock mitigating seats, which is critical for ride quality, operator tactical readiness, and operator health. At 77+ feet long, SEALION is C-17/C-5 transportable and can launch/recover by well deck, shore based mobile travel lift, or crane.</p> <p>FY 2020 Plans: Continue development and integration of upgraded situational awareness enhancement and begin design and development of tech data package for CCH - (replacement of 1 and 2).</p> <p>FY 2021 Plans: Continues development and integration of upgraded situational awareness enhancement and integration of JTWS. Continues development of tech data package for CCH - (replacement of 1 and 2).</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of -\$3.031 million is due to USSOCOM performing a comprehensive analysis of future capabilities and is reducing Combat Craft Heavy (CCH) program to better align with the Department's priorities as outlined in the National Defense Strategy.</p>			
<p>Title: Combatant Craft Mission Equipment (CCME)</p> <p>Description: CCME provides a rapid response capability to support SOF combatant craft systems, subsystems, and their emerging requirements. CCME provides technology refresh efforts to correct system deficiencies, improve asset life, and enhance mission capability. CCME focuses on spearheading specific Technology Readiness Level (TRL) 6 technology for compatibility, maturity, marinization, and successful transition to SOF combatant craft programs.</p> <p>FY 2020 Plans: Continue evaluation of candidate solutions for technology development including shock mitigation, family of antennas, situational awareness, Maritime Tactical Mission Network (MTMN), and enhanced Global Positioning System (GPS). Begin evaluation of candidate solutions for Digital Radar. Expand investment in enhanced survivability, navigation, Computers, Intelligence, Surveillance, and Reconnaissance Systems (C5ISR)/Situational Awareness (SA), power & energy, and other assured access technologies. Continue Link 16 integration.</p> <p>FY 2021 Plans: Continues evaluation of candidate solutions for technology development including shock mitigation, family of antennas, situational awareness, MTMN and enhanced GPS. Continues development, to include test and evaluation of solution for Digital Radar.</p>		3.794	6.490
			7.381

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020
Expands investment in enhanced survivability, navigation, C5ISR/SA, power & energy, and other assured access technologies. Continues Link 16 integration.			
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.891 million is due to increased investment in enhanced survivability, navigation, C5ISR/SA, power and energy, and other assured access technologies.			
Title: Combatant Craft Assault (CCA)		1.033	0.521
Description: CCA is a combatant craft for squad-size maritime mobility operations in contested environments. CCA is NSW's best craft for Visit, Board, Search, and Seizure (VBSS). It is the craft-of-choice for maritime interdiction and boarding operations because of the open deck space, maneuverability, and interoperability with an Afloat Forward Staging Base. Iron Triangle: 40 kt speed; 3 crew + 12 pax/5,000 lb payload; and 300 nm range. At 41 feet long, CCA is air transportable by C-130/C-17/C-5 and can launch/recover by crane, davit, well deck, or shore based trailer.			0.532
FY 2020 Plans: Continue integration and testing of Combatant Craft Forward Looking Infrared Radar (CCFLIR2) mast design and Comms Box/ Tactical Operations Center Intercommunications System (TOCNET).			
FY 2021 Plans: Continues integration and testing of CCFLIR2 mast design and Comms box/TOCNET.			
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$0.011 million is due to minor adjustments.			
Title: Maritime Precision Engagement (MPE)		6.740	13.537
Description: MPE is a family of standoff, loitering, man-in-the-loop weapons systems deployed on combatant craft and capable of targeting individuals, groups, vehicles, high value targets, and small oceangoing craft with low collateral damage. MPE consists of combatant craft alterations, integration of the MK 50 Remote Weapon System (RWS), and munition launcher systems. Munitions for this effort are funded through PEO SOF Warrior. The MK 50 RWS consists of a MK 50 RWS and a M2 .50 Cal heavy machine gun that provides stabilized accurate fire from the bow of the CCM.			5.647
FY 2020 Plans: Continue design and development of craft modifications such as bow hatches that preserve survivability, launcher system components, and the operator control station. Efforts will include the final design, integration and testing of the MPE Engineering Development Module (EDM) for the MK 50 RWS. Continued work on a government-controlled architecture and interfaces for the munition launcher, munition datalink/antennae requirements, and associated control systems which will include drafting of interface control documents. Finalize the CCM MPE A-kit design for installation on the CCM test article, representing a major			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
modification to the bow of the CCM. The final MPE A-kit design will support both the munition launcher and the MK 50 RWS, allowing both to be stowed below the deck of the CCM bow when not in use. <i>FY 2021 Plans:</i> Continues detailed design and development of craft modifications, a MK 50 RWS production representative article, and operator control station to develop a fully integrated operational capability. Continues prototype development and initial testing of the munition launcher B-Kit to produce an MPE launcher EDM for installation on the CCM test article. Additional work will be performed in the design and subsequent integration of similar MPE launcher capabilities into the Combatant Craft Heavy platform. <i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Decrease of \$7.890 million is due to completion of MK 50 RWS EDM.			
<i>Title:</i> Combatant Craft Forward Looking Infrared (CCFLIR) System <i>Description:</i> The CCFLIR program consists of a legacy CCFLIR and the CCFLIR2. The CCFLIR capability provides Special Operations Forces (SOF) with a multi-sensor, electro-optic system that enhances SOF effectiveness by improving their ability to detect, recognize, identify, range, track, and highlight objects of interest in a maritime environment. The legacy CCFLIR is under sustainment and is currently used on CCA, CCM, and Special Operations Craft Riverine (SOCR).	0.754	-	-
Accomplishments/Planned Programs Subtotals	14.536	27.421	16.728

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• PROC/0204SCCS: <i>Combatant Craft Systems</i>	19.069	48.462	17.278	-	17.278	36.876	45.239	24.415	25.479	Continuing	Continuing

Remarks

N/A

D. Acquisition Strategy

- CCM was a two-phase source selection process. Phase I involved a Small Business Set-Aside competition for two vendors to design, build and deliver test articles. Phase II selected a single vendor to provide a fully integrated baseline craft system for test and evaluation with options for production, engineering support, and contractor logistics support.
- CCH SEALION I & II were transitioned from United States Navy advanced technology demonstrator craft to USSOCOM. Sustainment for SEALION I & II is conducted via Special Operations Forces Support Activity (SOFSA). SEALION III is Sole Source to the Original Equipment Manufacturer (OEM) in order to take advantage of previous Government investments in manufacturing infrastructure for SEALION I & II.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 United States Special Operations Command		Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>
<ul style="list-style-type: none">• CCME will use streamlined Federal Acquisition Regulation (FAR) contracting with existing or planned Indefinite Delivery, Indefinite Quantity (IDIQ), Blanket Order Agreement (BOA), University Affiliated Research Center (UARC), and Federally Funded Research and Development Center (FFRDC) contracts and use Non-FAR Acquisition Authorities and Other Transaction Authority (OTA) agreements, where appropriate.• CCA will continue to develop, test, and integrate capability enhancements required to increase the crafts performance characteristics, reliability, and survivability.• MPE will employ Government engineering expertise and lessons learned to develop a common launch system for NSW combatant craft. Munitions selection will be executed as an MTA to meet program requirements.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Combat Craft Medium (CCM)	C/Various	Various : Various	15.040	1.629	Nov 2018	2.917	Nov 2019	2.243	Nov 2020	-		2.243	Continuing	Continuing	-
Combatant Craft Heavy (CCH)	C/Various	Various : Various	6.194	0.586	Jan 2019	3.956	Jan 2020	0.925	Jan 2021	-		0.925	Continuing	Continuing	-
Combat Craft Mission Equipment (CCME)	C/Various	Various : Various	4.905	3.554	Nov 2018	5.701	Nov 2019	7.381	Nov 2020	-		7.381	Continuing	Continuing	-
Combatant Craft Assault (CCA)	C/Various	NSWC-Carderock : Norfolk, VA	1.089	1.033	Nov 2018	0.521	Nov 2019	0.532	Nov 2020	-		0.532	Continuing	Continuing	-
Maritime Precision Engagement (MPE)	C/Various	NSWC : Dahlgren, VA	-	6.743	Dec 2018	13.333	Dec 2019	5.437	Dec 2020	-		5.437	Continuing	Continuing	-
Combatant Craft Forward Looking Infrared (CCFLIR) System	C/Various	Various : Various	-	0.754	May 2020	-		-		-		-	0.000	0.754	-
Prior Year Costs	C/Various	Various : Various	6.461	-		-		-		-		-	0.000	6.461	-
Subtotal			33.689	14.299		26.428		16.518		-		16.518	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CCME	C/Various	Various : Various	1.498	0.237	Nov 2018	0.239	Nov 2019	-		-		-	0.000	1.974	-
Prior Year Costs	C/Various	Various : Various	2.395	-		-		-		-		-	0.000	2.395	-
Subtotal			3.893	0.237		0.239		-		-		-	0.000	4.369	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CCME	C/Various	Various : Various	-	-		0.550	Nov 2019	-		-		-	0.000	0.550	-
MPE	C/Various	Various : Various	-	-		0.204	Dec 2019	0.210	Dec 2020	-		0.210	Continuing	Continuing	-
Prior Year Costs	C/Various	Various : Various	3.536	-		-		-		-		-	0.000	3.536	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			3.536	-		0.754		0.210		-		0.210	Continuing	Continuing	N/A
			Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			41.118	14.536		27.421		16.728		-		16.728	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

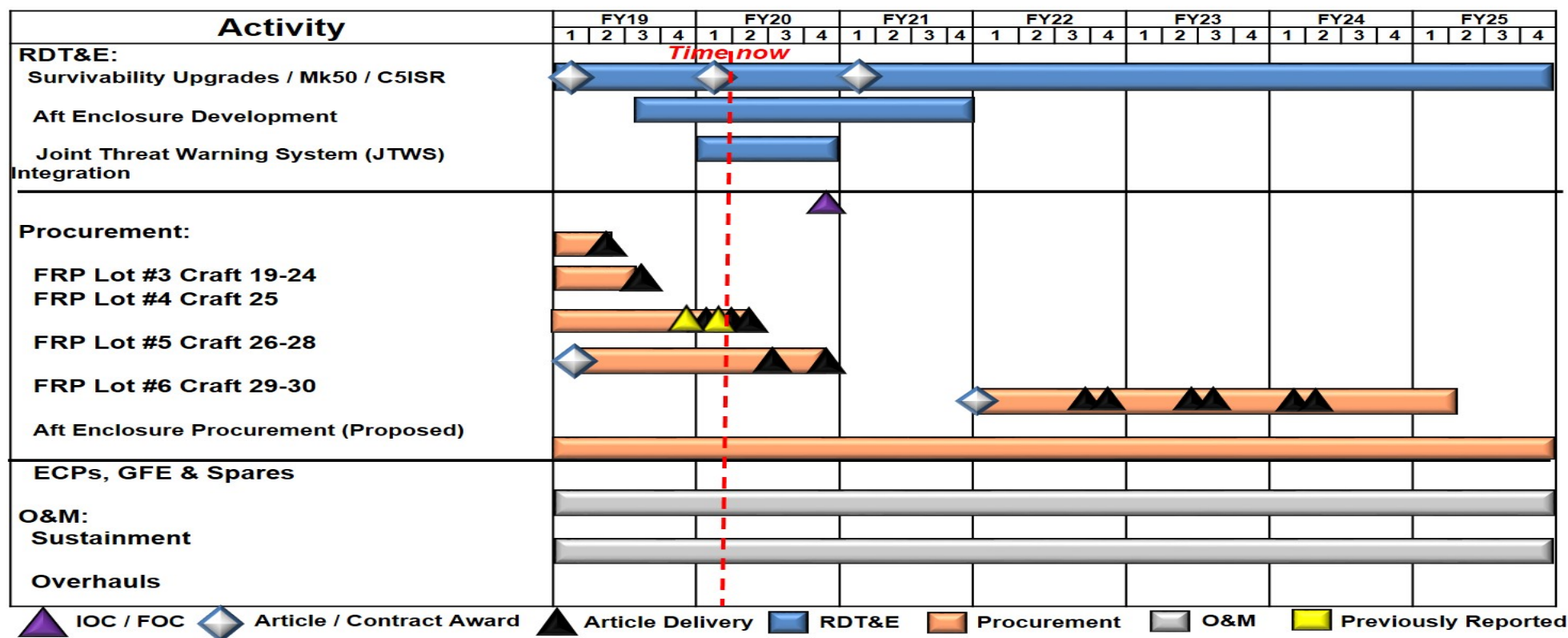
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Combatant Craft Medium (CCM) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

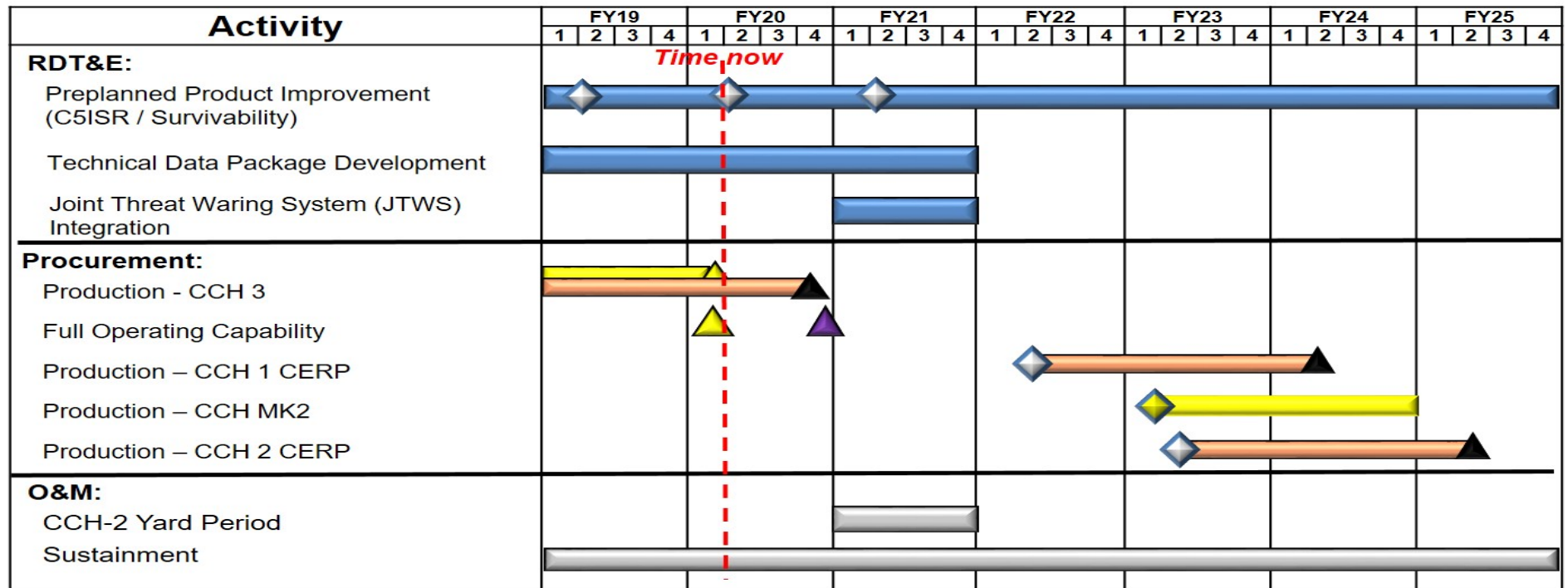
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Combatant Craft Heavy (CCH) PEO-Managed Schedule



 IOC / FOC
  Article / Contract Award
  Article Delivery
  RDT&E
  Procurement
  O&M
  Previously Reported

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

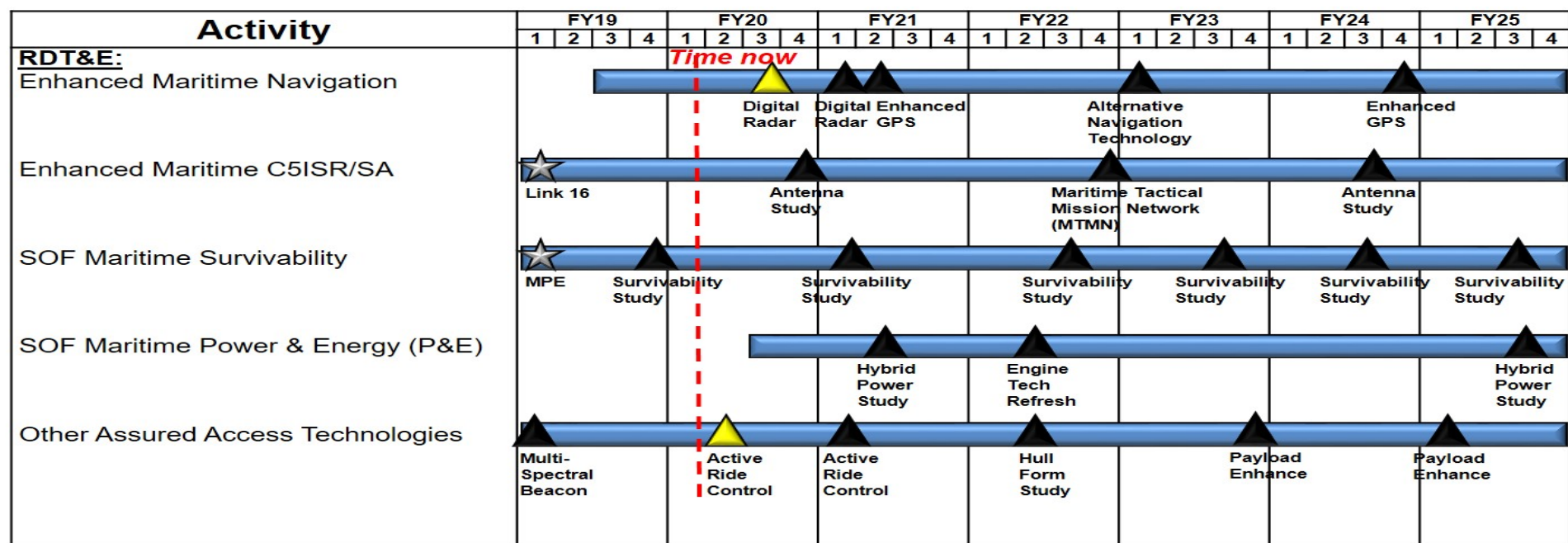
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Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Combatant Craft Mission Equipment (CCME) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

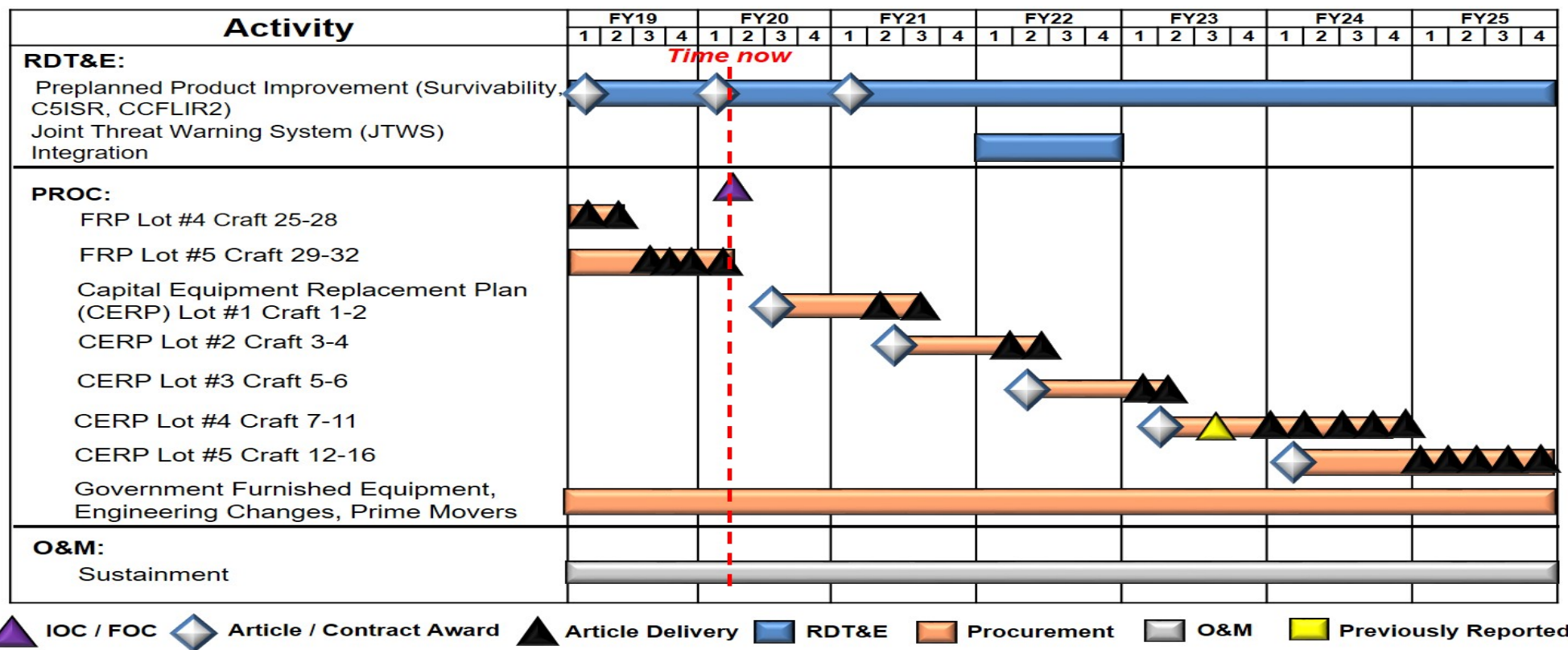
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Combatant Craft Assault (CCA) PEO-Managed Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

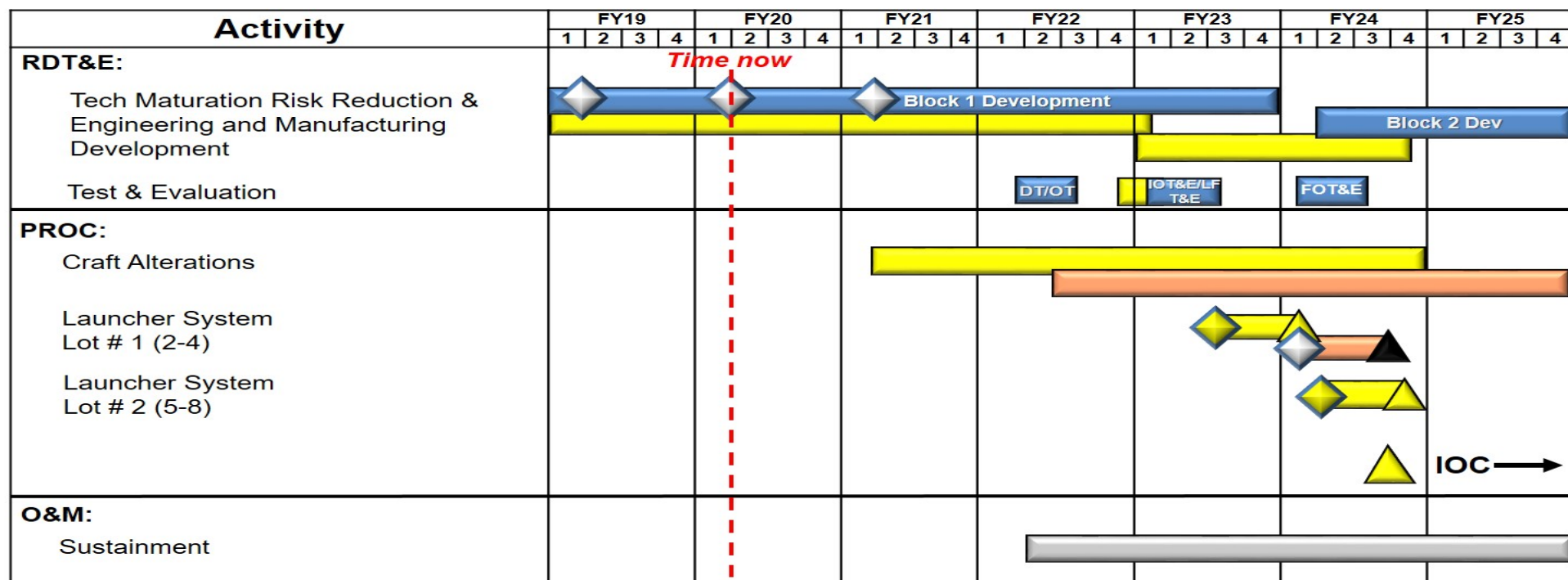
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Maritime Precision Engagement (MPE) PEO-Managed Schedule



IOC / FOC
 Article / Contract Award
 Article Delivery
 RDT&E
 Procurement
 O&M
 Previously Reported

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 United States Special Operations Command

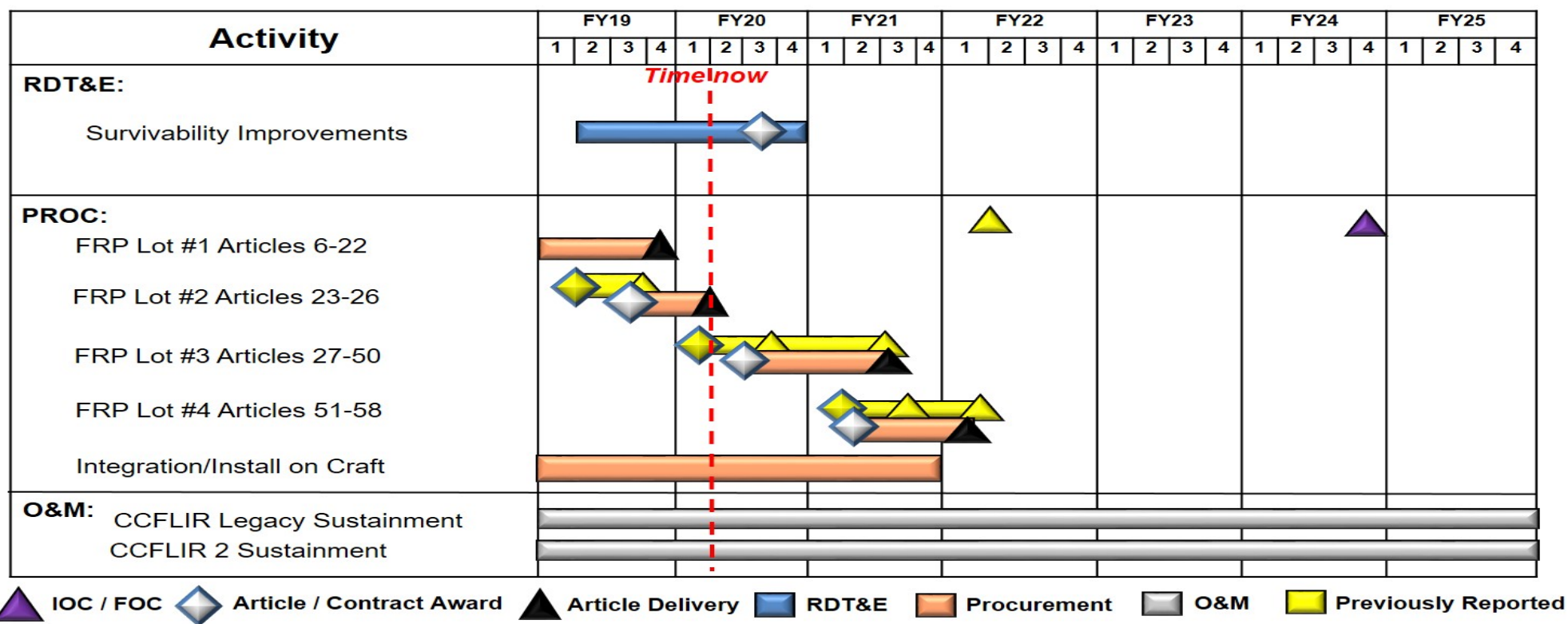
Date: February 2020

Appropriation/Budget Activity
0400 / 7

R-1 Program Element (Number/Name)
PE 1160483BB / Maritime Systems

Project (Number/Name)
S1684 / Surface Craft

Combatant Craft Forward Looking Infrared 2 (CCFLIR) PEO-Managed Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command			Date: February 2020
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Combatant Craft Medium (CCM)				
Weapons, Survivability, C5ISR, Combatant Craft Forward Looking Infrared (CCFLIR2), and MK50	1	2019	4	2025
Aft Enclosure Development	3	2019	4	2021
Joint Threat Warning System (JTWS) integration	1	2020	4	2020
Combatant Craft Heavy (CCH)				
Preplanned Product Improvement (Weapons / C5ISR / Survivability)	1	2019	4	2025
Technical Data Package Development	1	2019	4	2021
Joint Threat Warning System (JTWS) integration	1	2021	4	2021
Combatant Craft Mission Equipment (CCME)				
Enhanced Maritime Navigation	3	2019	4	2025
Enhanced Maritime C5ISR/SA	1	2019	4	2025
SOF Maritime Survivability	1	2019	4	2025
SOF Maritime Power & Energy (P&E)	3	2020	4	2025
Other Assured Access Technologies	1	2019	4	2025
Combatant Craft Assault (CCA)				
Preplanned Product Improvement (Survivability, Weapons, C5ISR, CCFLIR2)	1	2019	4	2025
Joint Threat Warning System (JTWS) Integration	1	2022	4	2022
Maritime Precision Engagement (MPE)				
Block I Technology Maturation and Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD)	1	2019	4	2023
Block II TMRR and EMD	2	2024	4	2025
Developmental Test/Operational Test	1	2022	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 United States Special Operations Command	Date: February 2020
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Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 1160483BB / <i>Maritime Systems</i>	Project (Number/Name) S1684 / <i>Surface Craft</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Test and Evaluation/Live Fire Test and Evaluation	1	2023	3	2023
Follow-On Operational Test and Evaluation Test and Evaluation	1	2024	3	2024
<i>Combatant Craft Forward Looking Infrared System (CCFLIR)</i>				
Survivability Improvements	2	2019	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 1160489BB / Global Video Surveillance Activities
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	58.478	4.780	5.363	4.606	-	4.606	5.024	5.129	5.096	4.749	Continuing	Continuing
S500C: Global Video Surveillance Activities	58.478	4.780	5.363	4.606	-	4.606	5.024	5.129	5.096	4.749	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element is part of the Military Intelligence Program. Details are provided under separate cover.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	4.780	5.363	5.471	-	5.471
Current President's Budget	4.780	5.363	4.606	-	4.606
Total Adjustments	0.000	0.000	-0.865	-	-0.865
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.865	-	-0.865

Change Summary Explanation

Funding:

FY2019: None.

FY2020: None.

FY2021: Decrease of \$0.865 million is provided under separate cover.

Technical: None.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 United States Special Operations Command **Date:** February 2020

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development					PE 1160490BB / Operational Enhancements Intelligence							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	110.094	12.176	9.962	11.612	-	11.612	11.031	11.260	11.522	11.752	Continuing	Continuing
S500D: Operational Enhancements Intelligence	110.094	12.176	9.962	11.612	-	11.612	11.031	11.260	11.522	11.752	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project is part of the Military Intelligence Program. This project is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	12.176	12.962	16.270	-	16.270
Current President's Budget	12.176	9.962	11.612	-	11.612
Total Adjustments	0.000	-3.000	-4.658	-	-4.658
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-4.658	-	-4.658

Change Summary Explanation

Funding:

FY2019: None.

FY2020: Decrease of \$3.000 million is provided under separate cover.

FY2021: Decrease of \$4.658 million is provided under separate cover.

Schedule: None.

Technical: None.

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